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## ORIGINAL ARTICLES.

### A STUDY OF MUSCÆ, WITH SUGGESTIONS AS TO THE PHYSIOLOGY OF INTRAOCULAR NUTRITION, THE ETIOLOGY OF CATARACT, GLAUCOMA, ETC.

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**INTRODUCTORY.** Subjective visual sensations have not been studied by scientific methods to that extent that their importance warrants. That these phenomena are very common (occurring doubtless to every person), of very great variety, of physiologic significance, and that they are transitory symptoms of many diseases, and unexceptional or continuous symptoms of others—these facts have long been known, but their import has hardly been realized. The recent admirable study of one variety, scotoma scintillans, by Gowers,<sup>1</sup> is, so far as I know, almost the first, certainly the first scientific attempt to classify one genus of these phenomena. Before reading Dr. Gowers' lecture I had carried out the experiments (if they may be so dignified) and made the notes to be described hereafter. Encouraged by the illustrious example, I am moved to set forth a few observations that may be suggestive and helpful to others in their better studies.

**CLASSIFICATION.** Until more accurate observations have been made, any attempted classification and theory of the phenomena in question will be inexact and incomplete. So soon as possible some sort of grouping and ordering should be made, however tentative it may be. But any such classification at once presupposes a theory or doctrine assumed concerning them, and this assumption is, of course, met by the evident fact that, scientifically, we know too little concerning them to permit of any but a loose and conjectural theory. In a rough way, however, with some doubt and qualification, we may say that all the phenomena in question arise or reside in organs more or less localizable—*i. e.*, they are either:

1. *Peripheral*, originating in the globe of the eye (including the optic nerve), or in adjacent and related organs, as, *e. g.*, muscæ, pressure-phosphenes, etc.

2. *Central*, originating in the cerebral centers where optic-nerve impulses are transformed into visual sensations, as, *e. g.*, scotoma scintillans, phosphenes from occipital traumatism, etc.
3. *Combinations of the two.*
  - a. *Periphero-central*, primarily or preponderatingly peripheral.
  - b. *Centro-peripheral*, primarily or preponderatingly central.

In a strict and physiologic analysis it may be true that every visual sensation requires the synchronous cooperation of both the peripheral and the central mechanisms. In those most manifestly central the mind imperatively locates a corresponding object outside of the body, and even a corneal opacity requires the central mechanism to become subjectively manifest. And yet the classification has a certain validity readily understood.

**NOMENCLATURE.** This also is in a state of chaos. It would be easy to devise a systematic nomenclature. I have, indeed, busied my fancy with one—and present it with little confidence, because such Minerva-born systems are generally stillborn. The world loves its old foolish names of things, and with most people habit is fate. It would seem a clarifying and labor-saving device to designate somewhat as follows:

#### SUBJECTIVE VISUAL SENSATIONS.

**PHOSSES:** Light-sensations of whatever kind or color, of a positive nature.

**APHOSSES:** Absences or interruptions of light-sensations, scotomata, shadows, whether formless or of more or less indeterminate form.

**PERIPHEROPHOSSES:** Phosses originating in the peripheral ocular mechanism.

**CENTROPHOSSES:** Phosses originating in the central ocular mechanism.

**PERIPHERAPHOSSES:** Aphosses originating in the peripheral ocular mechanism.

**CENTRAPHOSSES:** Aphosses originating in the central ocular mechanism.

**CHROMOPHOSSES:** Colored phosses—and, if desirable, subvarieties, to wit:

- a. *Erythrophosses*, Red Phosses.
- b. *Chrysophosses*, Orange Phosses.
- c. *Xanthophosses*, Yellow Phosses.
- d. *Chlorophosses*, Green Phosses.
- e. *Cyanophosses*, Blue Phosses.

<sup>1</sup> Lancet, Nos. 3747 and 3748. The Bowman Lecture: On Subjective Visual Sensations.

*f. Indikophoses*, Indigo Phoses.

*g. Ionophoses*, Violet Phoses.

Without driving the name-making instinct to name-mania, the modifications and qualifications of all subjective visual sensations may be adapted to the terms given, as, *e.g.*, stellate, fiery, darting, stationary, annular, beaded, fortification phoses, etc. The word *spectra* should not be used here, as it has other definite and sufficient uses.<sup>1</sup>

<sup>1</sup> A PERSONAL OBSERVATION AS TO "FORTIFICATION". CHROMOPHOSES. Dr. Gowers has wisely suggested the collation of personal experiences, and although my object in this writing is to express some thoughts as to one variety of "peripheraphoses," commonly called *musca volitantes*, which should be conveniently contracted to *musca*, I shall take occasion to say parenthetically that I have been subject all my life to attacks of fortification-chromophoses, or scotoma scintillans. These seem to have no definite periodicity. Sometimes I may go a year with none, and sometimes I may have several attacks in as many weeks. I do not remember to have had two attacks on the same day. I can trace them to no cause either in the general health, or in special conditions, of study, etc. I think being in bright sunlight has sometimes been an immediate or cooperating factor in bringing on an attack. More often I have noticed that after walking rapidly in sunlight the sudden entrance into a dark hall or room would produce what might be called a pseudo-attack—an aura, or intimations of the same, dim scintillations, indistinct chromophoses, but lasting only for a few seconds or a minute.

The genuine attack begins with the dimmest fluttering, as if of some indeterminate thing at the periphery of the field of vision, usually on the right side, a little north of east, let me say, or sometimes due northeast. This fluttering gradually approaches the center of the field, but never reaches it, and as it approaches it becomes both more distinct in form and more definite in chromization. It takes from five to ten minutes before the acme of the attack is reached, and as long for the subsidence, which last, as to color, location, etc., is the exact reverse of that of the ascending process. At the period of greatest intensity the chromization is not definite; *i.e.*, I cannot clearly distinguish definite colors; this may be due to the rapidity of the fluttering or scintillating movements, which I estimate as about six or eight a second. This vibratory or fluttering movement is about uniformly rapid from the beginning to the end of the attack, and is about the same in all attacks.

The predominating colors, perhaps, are, in order of prominence, yellowish-white, reddish-yellow, and a dark neutral-tinted or aphasic line that forms the most clearly distinguished central part of the "fortification"-figure. But the angles of my fortifications are never sharply acute; they are usually about right-angled, or slightly obtuse. Sometimes in their approximation to the center of the field of vision the widening fluttering lines will show a distinct curvature about it, but neither the straight nor the curved series of angular chromophoses usually pass beyond the hemianopic vertical line into the left hemisphere. There are no sequelæ whatever, no migraine, no headache, or other uncomfortable symptom.

During the paroxysm, although the chromophoses do not seem to attack the macular vision directly, I somehow find it impossible to continue reading. I have a difficulty in determining or describing the reason for this. By an effort of will I can see the printed words, at least temporarily, but they become blurred or in some way indistinct, and it becomes extremely difficult, though not painful, hardly even uncomfortable, to continue. The waving and quivering of that tormenting flag, so very close to the eye, is unendurable, and I lie down or walk about until it all passes away. Position of the body, or brisk exercise—nothing seems to influence in the least the ordered march of events. The process seems to appear when it will, without discoverable cause, and carries out

PERIPHERAPHOSES may, of course, be due to opacities of the cornea, aqueous humor, lens, vitreous, or retina. The most constant, commonly observed, and often bothersome of these is the class called *muscæ volitantes* (better, simply *muscæ*), or, perhaps, *muscal peripheraphoses*.

OBJECTIVE CONDITIONS FOR STUDYING MUSCAL PERIPHERAPHOSES. In the summer of 1895 I lived upon a mountain 4000 feet above sea-level. In looking at the panorama of mountains and sky stretched before me I found that my never-absent *mouches volantes* were often outlined with surprising clearness, and were far more numerous than I had supposed. I found that the background of a sun-illuminated bank of clouds brought them out with unsuspected sharpness. I have spent many hours in studying them. The dull white, horizonless, cloudy, misty, or smoky sky, with no definite object to fix the attention, below, around, or above, is, therefore, the best objective condition for the study proposed.

SUBJECTIVE CONDITIONS. The principal of these is good health (as that is essential to the highest retinal sensitiveness), patience, dexterity of ocular movements, good visual acuteness (my own is 20/10), and experience in catching infinitesimally slight visual sensations, and especially those intermediated by peripheral portions of the retina. The less direct sunshine there is the wider the pupils, and hence the larger the "field of operation," although the clouds should be bright with diffused sunlight. A large measure of success is doubtless dependent upon long education of the extramacular portions of the retina, and the ability to study objects focused there. But I shall describe a most valuable means of largely obviating the necessity of this peripheral-field study, and one also that has, I think, considerable significance in other directions. This method is one that for want of a better name I have called—

OCULAR BALLOTTEMENT. It is almost needless to explain the principle of physics underlying the experiment of ballottement as practised by obstetri-

its kaleidoscopic program without regard to any physiologic influence.

I may also allude to a variety of phoses that I have observed a thousand times, but that I have not seen described. In looking at a uniformly well-lighted blue sky I can, by careful and continuous indeterminate observation or interspace-fixation, bring to view numberless pin-point phoses, not very sharply and definitely outlined, but still clearly seen, appearing and disappearing with almost lightning-like rapidity, and quivering or darting throughout the central visual field. I attribute these to the commotion set up by the diffused strong light-stimulus in the pigmentary receiving-substance of the retina, these individual dot-phoses or peripheraphoses being the idiopathic response of particular retinal nerve-ends or elements to the general stimulus. These definite phoses are preceded by a period of indeterminate quivering of the air, as it were, or of something so near nothing that it is beyond recognition or description.

cians. If a body of slightly greater specific gravity than the liquid in which it is submerged is, by a fillip, thrown to the surface or upward, it will slowly settle back again to the bottom. In cases of chronic choroiditis shreds of exudate floating in a liquid vitreous can, by a little fillip of the eye by the patient (first upward and then suddenly halting at horizontal fixation), be seen with the ophthalmic mirror descending to the lower part of the eye like snowflakes in the night as seen from a window. The rate of downward movement will, of course, depend upon the relative densities of the liquid and the opacities.

From time immemorial muscæ have been described as shadows of retinal vessels and vitreous cells directly in front of the retina (not directly in front of the vitreous), located at one side of the fixation-point, so that they continually elude direct fixation by a will-o'-the-wisp movement ever further and further as one seeks to transfix them with the optic axis. A few experiments with ocular ballottement will show one that these are not fixed particles, but that they are bodies floating in a liquid medium, and thrown by motions of the eyeball upward or about, to settle, if permitted, at the most dependent portion of the eye. This can be demonstrated, while sitting in the usual position, by a rapid whirl of the eyeballs, suddenly again resting at horizontal fixation. The swirl of the muscal bodies will now be seen to follow the previous circular motion of the liquid, curving as they fall. One may then lie down on the right side with the axis of the body and head horizontal: the particles now fall, after ocular ballottement, toward the right temple or the ground. By lying on the left side the same facts, *mutatis mutandis*, are shown. By a very sudden and energetic jerk of the eyes downward, arresting the movement very sharply and suddenly, one may get a positive rebound from the bottom of the chamber up to the line of visual perception. But the most convincing and instructive experiment is to lie flat on one's back, without pillow and with the chin slightly elevated; by dexterity both in movements of the head and of the eyes, one is then able to bring any one of these muscæ into the center of the field, and poise it there, as a juggler adjusts a whirling plate above his head. Thus to bring any one of many muscæ haunting the periphery into the line of macular vision, and to hold it steadily there while gazing at it, will require considerable experimentation with the ocular fillip, and with delicate poising or adjustment of the head. By alternately closing one eye and then the other one may observe in which eye a group of muscæ is located.<sup>1</sup>

<sup>1</sup> I have been able to observe muscæ through the closed lids, the eyes being directed toward brilliant light. I have also studied them face downward, overlooking a neutral-tinted illuminated porch-floor, but the experiments brought out no significant facts.

**ACTION OF ACCOMMODATION UPON MUSCÆ.** If while holding an aphose thus in unstable but continuous fixation, a sheet of gray paper is interposed within about twelve inches of the eyes, at once what was a very indeterminate, formless, or dimly seen shadow is minimized in size, but correspondingly definitized in outline and characteristics according to well-understood optic laws. At the same time the fact will be noted that when deftly done the act of accommodation does not *per se* squeeze, or deport the object aside. I infer from this that wherever the liquid chamber is located the bulging of the crystalline lens does not greatly displace the particles of the liquid and of the contained muscægenetic particles. As I shall try to show, this liquid chamber (let us for the time name it the aqueovitreous chamber) is, I believe, located immediately behind the lens, and I at first thought that the fact that the particles do not move by the act of accommodation argued against the theory of this location of the chamber, because it would seem that the backward bulging of the lens would somewhat squeeze aside the particles in the base of the cup. I conclude, however, that the chamber is located as described, and that the non-movement of the particles in accommodation is due to the fact that the chamber is full of liquid and under pressure as much, of course, as all intraocular humors, and that the slight backward thrust or compression would not, therefore, displace the particles in the central portion, or that pierced by the visual axis. Besides this, the bulging of the circumjacent ciliary muscle would equal and neutralize any tendency of the lens-movement to displace them.

**THE LOCATION OF THE AQUEOVITREOUS CHAMBER.** The motion of the muscægenetic particles after the fillip of ocular ballottement determines the location of the aqueovitreous chamber. Objectively in choroiditis we can see the opacities descend after the upward glance of the patient's eye, or rebound from the bottom of the chamber when a sharp downward sweep is suddenly arrested. Subjectively we may observe the same phenomenon in the case of physiologic peripheraphoses or muscæ. But in the latter instance we can use the slightest fillip, a mere hint of short upward-glancing, and observe the resultant upward jerk of the particles, to be followed, of course, by their slow fall if the gaze is then kept steady and unmoved. Sometimes the particle is situated laterally in the field, and the motion of the eye to see it continuously displaces it further laterally, but the usually downward tendency can be shown by steadily holding the eye quiet. It certainly falls by gravity, out of reach of sight, in the dark parts of the chamber. I have rarely noticed any appearance disproving that the particles are not freely mobile, except that the larger or more swollen strands, and especially



the tangled masses of the same, are often more difficult to manage, seem to adhere to the walls of the chamber, etc. These facts necessarily locate the chamber in front of the vertical equator of the eye. If the chamber were posterior to the equator, an upward glance would throw the particles downward. (This fact may serve as an aid in localizing the position of pathologic vitreous opacities.) From readily recognized reasons, needless to recapitulate, the location of the aqueovitreous chamber containing the muscægenetic particles in suspension must be between the vitreous body posteriorly and the lens, its ligament, and the ciliary body, anteriorly. It may be said if such a "chamber" existed in this situation anatomists would long ago have demonstrated its existence, but in reply it need only be said that the mere fact of opening the globe destroys the space, and the extremely thin film of liquid in the unwallled space disappears unnoticed. Attention to it will, I am sure, result in methods of demonstrating its existence with the naked eye or the microscope.

#### CHARACTER OF THE MUSCÆGENETIC PARTICLES.

In my own case the most conspicuous of these particles are what I have called cellular; *i. e.*, aphasic globes or ring-like appearances, sometimes nucleated (with a darker center), the nucleus surrounded by a space of lighter gray between it and the darker wall. With suspended accommodation these cells, as shown against a cloud, seem to subtend an angle of perhaps one or two minutes, and all outlines are softened or blurred. With the accommodation active, these cells, with their (four-fifths or nine-tenths?) reduction in size, gain definiteness of contour and structure, and what seemed before as discrete cells are usually found to be arranged in chains or necklaces, the cells often marking an angle or curving-point from which extends an indistinct and homogeneous band or cord running off to other cells.<sup>1</sup> Almost constantly there are in the field also continuous strings of cells, the intercellular cord seemingly non-existent, and lying in contact with one another. I have counted as many as twenty-five or thirty, or more, "beads" or cells in a single string. Sometimes the strings stretch out almost in a straight line; at other times they are coiled and tangled in a confused mass. They change in appearance every second, as they are moved by the currents of the liquid and motions of the eyeballs. Under the microscope or in illustrations of histologic teased tumor or other tissue, I have seen structures almost exactly like those of certain muscæ vary in their relative density, some falling more rapidly than others. A few seem almost of the same specific gravity as the liquid, and fewer still are lighter. In the same string the beads are almost uniform in

size, but are of different sizes in different strands, some being twice the size of others. The larger are usually of indefinite outline and more filmy in appearance, seemingly more swollen and nearer disintegration.

The second class includes mere indeterminate and formless, cloudy or filmy shadows, or shreds of all sizes.

The third class requires for observation extraordinary acuity of vision, long experience and education in ocular ballottement, as well as peculiar and almost indescribable conditions of light. Through a window-slit I have sometimes observed them with remarkable distinctness, upon awakening in the morning, with the retina, of course, in a rested and acutely sensitive condition. They seem like dust or fine rain, settling downward much more slowly after the upward ocular fillip.

As nearly, therefore, as I can observe and classify them, my muscæ are:

1. Cells, or cell-strands, sometimes with intercellular cords, sometimes in juxtaposition, like a close necklace of beads.
2. Formless filmy or cloudy masses.
3. Fine particles, in appearance like soft, fine rain.

I have thus described these aphoses as they appear in a sitting posture, but by lying flat upon one's back and poising them before the macula the second class is soon proved to consist usually of the chains or necklaces that seemed formless only because they were seen by the peripheral portions of the retina, or because matted and massed in a tangle. Such a seemingly formless mass, poised before the macula may even be unraveled or disentangled by numerous ocular ballottements, until all the interlaced and matted strings are washed apart from each other.

Experience and careful observation have convinced me that the quantity of muscægenetic material is vastly greater than has been suspected. Under exceptional circumstances of light, etc., I have certainly observed as many as twenty or thirty separate strands or masses in the field at one time. In my own case I am in perfect health, and the seemingly excessive amount of this material cannot, therefore, be called pathologic. I believe that, in varying degrees, the material is present in every person, requiring only a number of necessary conditions and sufficient attention to make it manifest. While reading, of course, the lateral motions of the eyes do not make this vastly larger part of particles surge upward into the field of view, either to obscure vision or to become noticeable, and when walking they are not observable by anyone. If the motion of the eyes in reading were up and down, they would certainly be more troublesome. While still physiologic the amount of matter is never so great as dis-

<sup>1</sup> It was this, I think, that v. Zehender saw in his experiment, and not a reflex of the optic nerve.



tinctly to cloud vision, except in microscopic work or in such climatic surroundings as are fitted to bring it before the attention. Then it must not be forgotten that only as it rises into or descends through the small space lighted by the pupil is it possible for the retina to note its existence. There is doubtless, all about, a cavity or peripheral portion of the aqueo-vitreous chamber large in extent as compared with the area illuminated through the pupil, because by ballottement the muscæ fall out of sight and rise again out of an unseen space. Moreover, the peripheral muscæ at one time in the field never occupy what I should judge to be over  $40^\circ$  or  $50^\circ$  of the extramacular field. Even within this space, however, the trained and sensitive retina directed to the zenith perceives a vastly larger amount of muscæ-genetic material than would have been believed possible. It may also be noted that out of doors, or in well-lit rooms, the pupil is contracted, whilst in mydriasis the conditions of observation and study are destroyed.

There is a toy that crudely but strikingly illustrates the manifest fact. It is a hollow glass globe, filled with fluid, at the base of which are illustrated a house, people, etc. The fluid contains a sort of sand, of slightly heavier specific gravity than the liquid. By shaking the white sand a mimic "snow-storm" is produced as the grains settle to the bottom. If this globe were surrounded with black paper, except at one point, leaving an imitation pupil, and at the opposite end a hole to look into, and if into the liquid were thrown diaphanous or translucent shreds of teased and broken-down tissue in all states of degeneration, by manipulations, or "ballottements," one would have all the essential phenomena of the eye described, providing the size and refraction of the globe were such as to create the verisimilitude. The "chamber" of the eye, instead of being round and roomy as in the toy, is but a thin vertical space, between the vitreous and the structures in front of it, possibly thinner in the center, and deepening at the periphery adjacent to the ligament of the lens. Never have I seen a strand of cells as if "end-on," and rarely more than one or two behind another. In the region pierced by the visual axis, the chamber is therefore not much deeper than two or three times the thickness of the lining membrane of a vitreous cell.

**THE FUNCTION OF THE AQUEOVITREOUS CHAMBER AND ITS CONTENTS.** What an organ does, that is its function—and its functions, as those of most structures, are often multiple and made to serve multiple purposes. It is the fault of physicians that, having discovered one use of an organ, or one factor in the etiology of disease, they rest content and do not learn that, generally, disease has more than one, often several causes. In physiology, *e.g.*, the object

of winking has always been given as the cleansing and the keeping of the cornea uniformly moist. Doubtless a result as absolutely important is that of giving the retina temporary rests of darkness, whereby the extremely complex and unstable sensitiveness (visual purple or what not) is re-established. One may doubt if there is a more difficult and enormously delicate labor carried on by the animal economy than that of first making and then keeping the retina in that receptively delicate condition necessary for response to the inconceivably and infinitesimally slight stimulus of light. Muscæ may be considered as one such aid in securing an instant's rest, in temporarily shading, and continuously replacing light by shade, upon which the retinal equilibrium depends. Thousands of times every day these shadowy particles, ever variant in size and qualities, glide unnoticed in front of the macular region, and together with winking give it an instant's reduction or relaxation from the strain of visual response. But other and more important functions are suggested.

1. The existence of such a chamber serves to unravel the mystery of, at least, one aspect of vitreous nutrition, disconnected, as the vitreous body so largely is, from the usual means of excreting waste products. The hyaloid canal aids lymphatic excretion through the optic nerve, but both it and the hyaloid membrane are open in front and permit drainage into the aqueovitreous chamber there located. Into this space are extruded the products of tissue-metamorphosis, the collapsed worn-out cells, shreds of tissue—in a word, the *débris* of vitreous katabolic change.

2. The liquid may have a useful purpose as a lubricant and buffer in the ceaseless changes and frictions of the mechanism of accommodation, in equalizing and distributing pressure, etc. If the vitreous were pressed close against the filtering membrane, the passage of any liquid through the septum into the aqueous chamber would be greatly impeded.

3. Possibly more important still, the chamber may have a most useful and necessary function as a "settling-basin," wherein the undissolved products of vitreous excretion are shoved, and thus gotten out of the way of direct vision so far as relates to *fixed* and *continuous* opacifications. What a nuisance it would be to have a single musca-cell permanently before the macula!

4. As is well known, the liquid of the first ex-haustion of the aqueous chamber is non-albuminous and non-coagulable. Upon the reformation of the aqueous a second tapping is found to yield an albuminous and coagulable fluid. The significance of this fact in wounds of the cornea is evident. May the aqueovitreous chamber not aid in this function and serve as a storehouse or reserve stock for re-

filling the aqueous chamber, and in case of traumatism, with a readily coagulable fluid?

5. Doubtless by far the most important use, however, is that of attrition, dissolution, breaking-down, and liquefaction of the débris of vitreous excretion, so that this may pass into the absorbent channels and thus finally be disposed of. The process to which these particles are subjected by the ceaseless motions of the eyes is a genuine churning-process, the narrowness of the space in which they are confined rendering it all the more effective in the uninterrupted friction of the particles against each other and against the boundaries of the chamber. It may also be possible that the liquid may have some true digestive power to hasten the process of liquefaction. Active out-of-door life begets healthier eyes than indoor life, and to some extent this may be due to the more effective nutrition resulting from better local conditions of attrition, etc., in the "churning-process," resulting from bodily and ocular motility.

6. The translucent muscægenetic particles floating in the chamber may afford the incidental shading of all parts of the macular region to which allusion has been made, and thus serve to give slight relief from the constant glare of light that, as all know, is so harmful to retinal sensitiveness. In this respect they serve to supplement the act of winking, as every wink slightly stirs the sediment of the liquid, just as to a greater extent does every contraction of the extra-ocular muscles, incessantly active during waking.

The query arises and may be worth noting parenthetically, whether the products of this dissolution-process or digestion may not in some way be utilized by the lens as nutritive material. So large an amount of organic matter, half or wholly digested and lying in constant contact with the capsules and ligaments of that organ, the only supply of nutriment of which is drawn from this cavity, must certainly exercise an important influence upon its nutritional condition and repair. But this aspect leads me to remark upon a possibly pathologic significance growing out of the ensemble of facts and inferences that have been set forth.

The two most common, most mysterious, most serious, and, to treatment, most intractable, of all diseases of the eye are cataract and glaucoma. The etiology of each is as obscure as the treatment is unsatisfactory. That the best minds of a special class of brilliantly intellectual medical men have failed so far to bring solutions to these questions makes me shrink from any but the most modest suggestion of a not improbable explanation.

**A POSSIBLE FACTOR IN THE ETIOLOGY OF CATARACT.** Whether or not the lens and its capsules, for purposes of nutrition, make any physiologic use of the dissolved and digested organic matter bath-

ing the posterior capsule and ligament, it does not seem otherwise than reasonable that with pathologic conditions of this liquid there may ensue pathologic conditions of the lens and disturbances of its nutrition. Careful consideration of the influences and circumstances at work, of the transcendent delicacy of the processes, and of the instability of the equilibrium or balance between secretion and excretion of the "closed system" of the eye—all these and other things that might be enumerated make it plain that pathologic states of the liquid of the aqueovitreous chamber may readily arise. When one reflects upon the unsuspectedly large amount of normal undissolved muscægenetic material or débris of this chamber, it is readily seen that a slight increase in the amount above the normal would readily change physiology into pathology. Under such circumstances digestion would quickly become dyspepsia—and especially so in the already deteriorated nutritional processes of the aged, of the weak, etc. Then, also, it should be remembered that the slightest decrease of the amount of the diluent, the secretion filling the chamber, would have the same effect. Let one also realize well the necessarily small capacity of the chamber, the general microscopic plan of the space, the parts and processes, and it will become plain that the narrow line separating physiology and pathology is most easily passed. Senile cataract does not arise until the late period of life when nutritional disturbances are at work in the entire organism and the lessened vital forces are more and more incapable of repairing the ravages of tissue-waste and injury. I have myself no doubt that long-continued uncorrected eye-strain is a potent factor in the production of senile cataract, but that it acts alone, without other contributing agencies, is hardly supposable. With the growing inelasticity of the lens—presbyopia—(may this inelasticity itself not depend upon local (muscal?) as well as systemic denutrition?) the presbyopic ciliary muscle does not cease to work—indeed, its labors are perhaps all the more straining and irritating. Uncorrected astigmatism in presbyopes thus serves to induce pathologic conditions of the ligament and capsule of the lens (the filtering membrane), with irritation and denutrition. I would only hazard the suggestion that a morbid condition of the fluid bathing the parts, an excess of undigested muscæ, a slight upsetting of the balance between secretion and excretion, may cooperate with ametropia and systemic denutrition to produce the local lenticular denutrition or morbidity called cataract.<sup>1</sup>

<sup>1</sup> Certain forms of anterior choroiditis, cyclitis, "posterior capsulitis," etc., may possibly be caused or complicated by such conditions. Bacteria introduced through traumatism or other means would find here a culture-medium well adapted for their multiplication.



**THE ETIOLOGY OF GLAUCOMA.** The obliteration of the filtration-angle is beyond question the immediate or secondary cause of glaucoma, but what is the *causa causæ*—the cause of the cause? Why the increased pressure from behind? To this question no answer has been given. Closure of the filtration-angle or of the canal of Schlemm, and excessive secretion in the vitreous chamber—deficient excretion in front, and over-production behind—have seemed the sole alternatives. To these I would add a third, the choking or clogging of the sieve, the membranous septum of the lens-ligament, by the debris-sediment, or solution of the aqueo-vitreous chamber. Excreted organic matter, softened, partially liquefied, or partially digested, granular, or viscid, of all possible substances, would be most perfectly adapted to choke up the pores and the intercellular spaces of a membranous diaphragm. This is so outside of the body in the osmotic processes of dead membranes, and it cannot fail to occur in the living membrane.

It may be urged that such a choking of the septum would at best only be likely at the bottom of the chamber, where the sedimental particles naturally settle. The objection ignores three facts:

1. It is not at all to be taken for granted that only it is the visible, the heavier, or the larger particles that may choke the membrane the most. It may possibly be the lighter and finer, the more dissolved varieties that are not seen at all, or that are rarely seen; or, still more probable, the liquid itself, made over-viscid by too much dissolved material.

2. We do not know but that the top of the chamber may be equally or even more charged with non-liquefied, unabsorbed material of lighter specific gravity than the liquid. This would seem very plausible. Such particles would not often produce muscæ, because, to reason from analogy with objective solutions, such floating matter would, by the motions of the eye, not be submerged, and thus be brought into the area to render them visible. That some muscægenetic particles are lighter than the liquid, and do inhabit the upper part of the chamber, I have (rarely) proved.

3. Most significant still is the answer that we forget that one-third of our lives is spent in sleep and in lying down. Those who sleep on their sides would expose one of the lateral (when prone, the lowermost) portions of the chamber to impacts of the sedimentation-process, and at a time when immobility of the eyes would permit the injury (if it exist) from sedimentation and choking to be most active. Very few persons lie habitually and continuously all night with the head in one position, so that different parts of the filtering septum are successively exposed for hours to the risk of being covered with an excess of sediment. It is said that in sleep the

eyes are turned upward; *i. e.*, as if by contraction of the superior rectus. If so, is it a device of the organism to permit the sediment to drop away from the septum, and at the posterior or flat aspect of the chamber? Sleeping upon the face, or as nearly so as possible, would be the worst position. Certainly upon the back, and without a pillow, would be the single position that would free the septum most from the risk of being covered by sediment. But I have never known but one person who habitually slept in this position. It would be interesting, though by no means conclusive, to learn the position in sleep of glaucomatous patients.

**THERAPEUTICS.** Not only does this theory of the primary origin of the glaucomatous process seem *apriori* to meet many or all of the requirements of an explanation, but it also appears to correspond with the clinical demands. All varieties of cases, the acute, fulminant, subacute, or chronic, would be explainable by it as the natural responses of varying degrees, clearings, and modifications of the sedimental chokings of the filtration-septum.

Both cataract and glaucoma occur in those over forty or fifty years of age, when diminution of secretion and lessening of the general nutritive processes are noteworthy characteristics. Diminished secretion of the dissolving or digestive fluid of the aqueovitreous chamber, even to an infinitesimal degree, in the almost infinitesimal proportions of these areas and functions, would at once produce markedly increased viscosity of the contained liquid—a condition also more liable to occur in connection with the corporeal inactivities of old age, as well as the lessened excretory and vital powers of the tissues generally. When this morbidity is, as it were, chronic, only cataract may arise. When it rises to a certain pitch, clogging, or (as workmen say of sieves and drains) "fouling" of the filtering membrane occurs, and we have the glaucomatous process. This heightened process of glaucoma, too, is prone to occur in the nervous, and worried, and anemic, especially in women, in those generally in whom the expenses of the life-process are in excess of the income—*i. e.*, when there is excess of waste product over excretory and secretory repair—specifically, when the aqueovitreous humor tends to become overloaded with semi-dissolved, non-excreted, viscid matter. (Did a fat person ever have glaucoma?) It may be noted, also, that in glaucoma the lens often become cataractous, whether secondarily from pressure or primarily from morbidity of the aqueovitreous humor and denutrition remains to be proved. The increased albuminousness and coagulability of the aqueous humor in glaucoma also tally with what the theory would demand. It is exactly as in the physical process of osmosis under pressure outside of the body. The strange clinical fact that the glaucomatous process is often tem-



porarily checked by sleep should not be forgotten. This has a double significance in the light of the theory here proposed.

When we reach the clinical observations that mydriatics intensify the glaucomatous process, and myotics lessen it, we find that hitherto these facts were purely empiric, and the rationale of the action was hidden. But the myotics, eserine and pilocarpin, increase glandular, osmotic, and secretory activity, while mydriatics correspondingly or to a greater degree lessen them. Now, although an increase in the amount of the liquid in the aqueo-vitreous chamber would seem, *a priori*, to increase the intraocular pressure; it also would lessen the viscosity of the fluid there, and thus lessen the clogging of the filtration-membrane in front. The reason also becomes clear why this action is the more pronounced the earlier in the glaucomatous process it is instituted, and why it is comparatively resultless in late stages, when the anterior filtration-angle and the canal of Schlemm are occluded by pressure and inflammation, and the results of the glandular functions posteriorly are annulled by the same influences.

Nobody has suggested any satisfactory reason for the empiric fact that iridectomy is of use in a certain class of cases of glaucoma. Sometimes we know it does harm; often it does no good, even in the acute stages, and in the "absolute" or chronic cases, and in glaucoma simplex, it only succeeds in giving any relief in about one-half of the cases. When the tension of the eye is normal it is wholly without effect in reducing tension to subnormality. If the theory I have suggested be proved valid, the explanation of all these facts observed clinically becomes clear, or will become so by investigation. Sclerotomy has undoubtedly effected cure in some cases. But any operative measure, to be effective, must increase the filtration-capacity from the aqueo-vitreous into the aqueous chamber. A simple hole through the suspensory ligament would undoubtedly be absolutely effective—if we could secure this without producing traumatic cataract or luxation of the lens, and when we can safely extract a non-cataractous lens (in conjunction with posterior discission), we may be able to save some remnant of vision in neglected and otherwise hopelessly ruined glaucomatous eyes. In the light of the theory here set forth, iridectomy can only aid in relieving glaucomatous tension by increasing the porosity of the filtering membrane. Just the precise method in which it effects this I leave for future investigation.

Massage, properly and intelligently applied, would seem to be the most clearly indicated therapeutic measure to break up mechanically the clogging process, stimulate additional secretion of diluting and digestive fluid, and arouse normal function generally.

I have had but one case of glaucoma since groping my way to this theoretic conception of the disease, and that was a typical case, in which vision had been reduced to  $\frac{2}{100}$ . I began by teaching the patient to some extent the principles, and accurately the manipulations, of massage of the globes of the eyes. There had been no considerable response of the pupil or of the glaucomatous process to eserine. Before proceeding to iridectomy I determined to try massage, and from the day it was instituted improvement began, and the vision steadily rose to  $\frac{3}{8}$ , with entire cessation of all the symptoms, except that the paralyzed iris still remains somewhat mydriatic and wholly immobile. If the supposed sedimental stasis and choking had not been broken up, stirred up, and helped by means of massage, it would appear that an incision of the sclera beneath the dependent portion of the aqueo-vitreous chamber, with drainage, and even artificial irrigation of the chamber with a solution of sodium chlorid, would be the natural indication in obstinate and extreme cases.

The foregoing, and especially so far as it relates to cataract and glaucoma, is a study by the method of Zadig, upon a manifestly very small basis of facts. I offer it as a working-hypothesis. I am as well aware as any critic can be of the dangers of extensive inferences from slight data, but all science, in its reachings into the unknown, rests more or less upon Zadig's method, and the only criticism that finally obtains is as to the accuracy of observation of such facts as form the basis of the inquiry, and the inevitableness or firmness of the logical links of the inferential chain. The proof of the whole theory, so far as relates to the last two paragraphs, must finally rest upon the facts of the existence and running away of the Queen's horse itself, its color, its length of tail, its silver shoes, etc.—that is, in our instance, upon the microscopic study of the parts and processes, and upon the result of the therapeutic tests. These things I must leave to others to carry out. If I have erred, and if the suggestions I have offered are either in part or entirely unjustified, my excuse for the haste of publication, prior to experimental provings, is that I would prefer the just censure of the most unsympathetic critic and disprover, rather than to risk the relief of a single patient by withholding what may turn out to be a new ray of light upon the etiology and cure of a group of formidable diseases.

*Typhoid-bacilli in the Urine of Typhoid-fever Patients.*—WRIGHT and SEMPLE (*Lancet*, No. 3752, p. 196) have reported seven cases of typhoid fever, in six of which typhoid-bacilli were detected in the urine. They consider this evidence as supportive of the view that typhoid fever is a "blood-infection" rather than an "intoxication-process." The practical outcome of these observations is that care should be taken in the disinfection of the urine as well of the intestinal evacuations.

SOME MOOT POINTS IN THE TREATMENT OF APPENDICITIS.<sup>1</sup>

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I DESIRE to premise this paper by saying that it is based very largely on the literature of the subject. My own experience has not been sufficient to allow me to give any great weight to deductions drawn from it alone.

Briefly stated, I have had under my care within the past seven years fifteen cases of appendicitis. Eight were pus-cases, seven of which were treated by incision and drainage and one by removal of the appendix. One case was drained through the healthy peritoneal cavity. In the other six cases the peritoneal cavity was not opened.

Seven cases were treated without operation. All recovered. There has been no relapse and no permanent fistula. Two of the cases are too recent to determine as to the permanency of the cures.

While I believe appendicitis to be from start to finish a surgical disease—*i. e.*, one demanding the services of a surgeon—I cannot subscribe to the doctrine that all cases require operation. My experience, together with a careful study of the subject, compels me to believe that by the exercise of good surgical judgment a large number of cases will be found in which non-operative treatment will yield the best results. In a previous paper<sup>2</sup> seventy-seven cases were tabulated in which operation was not deemed advisable; all recovered without recurrence so far as known, though all of them could not be followed. To these I can now add two more occurring in my own practice. Richardson, of Boston, also reports<sup>3</sup> fifty cases treated medically, without a death.

When there is pus, perforation, or severe peritonitis, operation is demanded; as it is also in those cases in which there is imminent danger of those conditions arising. Of course, I am aware that many hold that no man can tell when a mild case will develop into a severe one, which an operation cannot save. I believe this to be possible, but contend that it is a rare exception. In this connection we must not reckon without those fulminant cases in which fatal conditions obtain in a few hours, and in which death results, no matter how prompt the operative interference. In these cases fatal sepsis, peritonitis, or other fatal conditions are present when the symptoms first manifest themselves. In my paper already referred to are tabulated fourteen primary cases in which there was suppuration or perforation almost from the beginning.

Chronic cases, and cases in which recurrences are frequent, should, in my judgment, be subjected to operation, for the risk of operation in those cases is no greater than one would be willing to take for the chance he would have of permanent and complete recovery.

Before this question can be definitely settled, it seems to me necessary to collect a large number of cases from the practice of those who operate in all cases as soon as the diagnosis can be made and wherein they have had the opportunity of making early diagnoses, and an equally large number of cases treated under similar conditions by those who take the position that some cases require operation and others do not. As yet the statistics for such comparison are not adequate.

In case of operation there can be no question that the appendix should be removed in cases without pus, cases of endo-appendiceal abscess, and in the majority of peri-appendiceal abscesses in which it is necessary to carry the drainage through the general peritoneal cavity; also in cases of gangrene or perforation without limiting adhesions.

Exception should be made in favor of rapid opening, cleansing, and drainage, preferably with gauze, in cases of this latter class operated upon *in extremis*. In this class of cases prolonged operation means death, and the surgeon should sacrifice the ideal for the sake of the life in his hands, albeit he may but rarely succeed in saving it.

Concerning those cases in which there is a circumscribed collection of pus that can be opened without entering the general cavity of the peritoneum there is much difference of opinion. Maurice Richardson says:<sup>1</sup> "If, for no other reason, the low mortality in cases of circumscribed abscess, and the perfectly satisfactory and permanent results that have followed simple incision and drainage, are sufficient grounds for limiting our operations to the cavity itself." He has had but two recurrences after drainage, and in one of these the drainage was through the rectum. That appendisectomy is attended with infinitely greater primary danger than simple drainage in these cases cannot, of course, be denied. One need only to read the reported cases to be convinced that, already, lives that might have been saved by simple incision and drainage have been sacrificed through adherence to the dogma that the appendix should always be removed. To offset this greater danger there should be unquestionable proof that the removal of the appendix offers security against recurrence or other dangers that, though perhaps not so immediate, are still none the less real. The cases thus far reported fail to furnish this proof.

Cases of recurrence of abscess are not unknown

<sup>1</sup> Read at the meeting of the Madison County Medical Society, Alexandria, Ind., July 2, 1895.

<sup>2</sup> American Journal of the Medical Sciences, December, 1893.

<sup>3</sup> American Journal of the Medical Sciences, January, 1895.

<sup>1</sup> Loc. cit.

by any means after the so-called "ideal" operation. In a case reported by Richardson,<sup>1</sup> operated upon by Dr. Beach, who removed the appendix, the patient subsequently developed an abscess, which was opened and drained, and a week later was seized with sudden and violent abdominal pains, and died.

Dr. Fowler,<sup>2</sup> of New York, also reports a case in which an abscess developed three months after an appendisectomy.

Dr. Richardson<sup>3</sup> reports recurrence of all symptoms of appendicitis a year after a removal effected by him, but in which the symptoms subsided without further operative interference. A. C. Bernays, in a letter to me, reports a case in which after removal of the appendix there were two relapses, death following the operation in the second relapse. Other cases of similar kind might be cited, but the foregoing are sufficient to show that appendisectomy does not render patients upon whom it is performed absolutely immune from further trouble in the right iliac region.

Theoretically there would be, it seems at first sight, great advantage in removing the appendix, inasmuch as the ligature shuts off communication between the abscess-cavity and the bowel; while in removing the appendix we remove the origin of the trouble. Practically, however, in a great many cases this communication between the bowel and the abscess has already been closed by inflammatory processes; while the appendix itself is only one among many equally potent sources of infection. The abscess-walls are infiltrated with germs and the coats of the bowel are softened, and through them infection is constantly being added. Removal of the appendix does not remove these sources of infection, while the tearing of the adhesions and the manipulations necessary to removal of the appendix liberate these germs from the abscess-walls, inhibit the power of resistance of the tissues, and increase the transmigration of the germs from the bowel. In my paper already referred to I say: "The complete and permanent recovery of the patient after removal of the appendix in no small measure depends upon the treatment of the stump. The ideal method seems to be that in which the stump, after ligation, is turned into the cecum and buried by Lembert sutures as described by Senn,<sup>4</sup> and described and illustrated by Morris in the *New England Medical Monthly*, April, 1893, p. 331. Indeed, I am convinced by a careful study of all the literature upon this point accessible to me that, unless the stump be thus treated or in some way be covered by peritoneum after ligation, the removal of the appendix

leaves the patient in great danger of perforation." I am still of the opinion that this ground is well taken. This treatment of the stump is not practicable in the class of cases under discussion; hence, in them fecal fistulae are but little if any more uncommon after appendisectomy than after incision and drainage.<sup>1</sup>

By removing the appendix we unquestionably remove one source of infection, and therefore it should be removed if it can be done without additional risk. However, in the majority of cases of the class now under discussion the advantages over incision and drainage that removal of the appendix offers are more than counterbalanced by the risks that it adds.

Another objection to too close adherence to the "ideal" operation is that it must inevitably lead to unnecessary operations. Not every collection of pus in the right iliac region, even in males, has its origin in the appendix. I saw a case at Defiance, Ohio, in consultation with Dr. Thatcher, in which a diagnosis of appendicitis with abscess had been made. I concurred in the diagnosis, but the man refused operation. He died in a few days, and an autopsy showed the appendix healthy, the pus being due to ulceration of the cecum. Rushmore<sup>2</sup> reports a similar case. Murphy<sup>3</sup> reports a case of total destruction of the mucous membrane of the colon, with a large abscess.

I think we are warranted in concluding as follows:

1. All cases of appendicitis do not require operation; on the contrary, some cases are best treated without operation.

2. In cases requiring operation the appendix should be removed: (a) when there is no pus; (b) when an endo-appendiceal abscess is present; (c) as a rule, when there is a peri-appendiceal abscess that requires drainage through the general peritoneal cavity; and (d) when there is general peritonitis without adhesions, with the exception noted.

3. A simple incision should be made and drainage provided in cases with circumscribed abscess, when this can be done without opening the healthy peritoneal cavity. An exception should be made to this rule in cases in which the removal of the appendix will not add to the gravity of the operation.

47 WEST WAYNE STREET.

Dr. James Ash, of Philadelphia, died of pneumonia at Asbury Park, N. J., on September 2d, at the age of seventy-seven years.

<sup>1</sup> The only fecal fistula that I have had in my own practice was after an appendisectomy in a pus-case. It closed, however, in a short time.

<sup>2</sup> *Annals of Surgery*, vol. xix, pp. 577, 578.

<sup>3</sup> *Journal of the American Medical Association*, March 3 to 24, 1894. Case 125.

<sup>1</sup> *Boston Medical and Surgical Journal*, August 4, 1892.

<sup>2</sup> *Annals of Surgery*, May, 1895.

<sup>3</sup> *Loc. cit.*

<sup>4</sup> *Journal of the American Medical Association*, Nov. 2, 1889.



## CHRONIC GONORRHEA AND MARRIAGE.

BY FRANK P. VALE,  
OF WASHINGTON, D. C.

In looking over this subject one finds very little to guide him in giving advice to chronic blennorrhagics who wish to marry. There is ample evidence, however, of the danger of infecting the wife under such circumstances. Nearly a quarter of a century ago Noeggerath called attention to the important part played by chronic or latent gonorrhea as a cause of pelvic troubles in the female, and, although adversely criticised at the time, his views are now regarded as being in the main correct. It is well established that long after apparent cure men may infect their wives. The infection does not always manifest itself as an acute vulvovaginitis. The first symptoms complained of may be due to a metritis, which has developed slowly and insidiously, the inflammatory process extending finally to the tubes and ovaries.

The rules laid down by Finger with regard to chronic gonorrhea and marriage are generally accepted. Janet, however, regards them as being in some respects superfluous, and in others as not sufficiently strict and rigorous. An interesting case, bearing upon this subject, is reported by Brewer.<sup>1</sup> He was consulted by a gentleman contemplating marriage, who had had an obstinate attack of gonorrhea six years before, but who had been free from symptoms for the last three years, with the exception of occasional slight moisture at the meatus. Examination of his urine showed shreds in which gonococci were found. He married, contrary to advice, and two weeks after the ceremony his wife developed an acute gonorrhea.

Brewer accepts Finger's rules, viz.: that daily examination of the shreds in the urine for three weeks show neither gonococci nor pus-cells; that a purulent discharge caused by irrigation of the urethra with a solution of mercuric chlorid or of silver nitrate show no gonococci; that there be neither stricture nor prostatitis. Brewer's own rule had previously been to wait until three months after the subsidence of all acute symptoms, examination of the shreds not showing the presence of any gonococci. Finger lays especial stress on the requirement that pus-cells should be absent from the shreds, adding that after long and laborious examinations with negative results the gonococci may suddenly appear. He most urgently cautions against depending on ordinary bacteriologic examinations, and does not allow marriage until pus-corporuscles are absent from the shreds. A case that is still under my care has impressed upon me the value of this advice, and more particularly the

necessity of avoiding the conclusion that gonococci are absent until certain therapeutic reactions, which are especially advised by Janet, have been employed, and the secretions of the resulting recrudescence carefully and repeatedly examined.

Mr. A. was sent to me July 8, 1895. Three months before he had contracted gonorrhea. He was to be married in the latter part of August. From the examination of his urine and the history of his case, I concluded that the inflammation had extended posteriorly. After the first jet the urine was uniformly cloudy. Examination of the shreds showed no gonococci. There was a slight succulent narrowing about the middle of the penile urethra. For three weeks I daily passed the largest sound his incised meatus would admit, practised urethrovaginal lavage daily with from 1:5000 to 1:2000 potassium-permanganate solution. After the cloudiness of the urine had disappeared I also made instillations of copper sulphate 1:20, following each permanganate lavage. At the end of three weeks the urine was free from shreds. The next day, Sunday, the patient did not report. On Monday he came with a profuse discharge, which showed typical groups of gonococci in every twenty or thirty cells. The two-glass test showed clear second urine, proving his posterior urethritis to have been cured. I attribute this fortunate recrudescence to the man's having eaten crabs, the only unusual article of his diet on Sunday. It had been fully three months since all acute symptoms had subsided. During three weeks there had been no gonococci, only two or three atypical cocci here and there in the specimens examined. In view of these facts, and with daily washing of the entire urethra with permanganate solutions (supposed to be almost specific against these germs), I am afraid I should have given my consent to his marriage at the appointed time, a course that would undoubtedly have resulted in infection of his wife.

Janet has given us some valuable advice on this subject. He takes exception to the rules of Finger in some respects. He does not think it necessary that leukocytes be absent from the shreds, having seen them in the mucous flakes in the first jet of morning urine in healthy men. They are found, moreover, a long time after a cured gonorrhea. What Janet insists upon, next to the absence of gonococci, is the absence of late secondary infection by diverse organisms, and also of that state of receptivity which predisposes to late secondary infection, and follows as a result of the injury done by the gonococcal invasion.<sup>2</sup> In his latest article<sup>3</sup> Janet revises this opinion somewhat,

<sup>1</sup> *Annales des Maladies des Organes Genito-Urinaires*, 1892, pp. 275 et seq.

<sup>2</sup> *Ibid.*, 1893.

<sup>3</sup> *Ibid.*, 1895, pp. 481 et seq.

<sup>1</sup> *Journal of Cutaneous and Genito-Urinary Diseases*, March, 1891.

and instead of forbidding marriage until the urethra has been demonstrated to have recovered from this susceptibility to secondary infection, he allows marriage as soon as the patient is rid of his gonococci and secondary infection, provided the latter agrees to follow instructions given him to prevent late secondary infection.

Janet divides chronic blennorrhagics, with reference to marriage, into two classes: disinfectable and non-disinfectable. With regard to gonococci, he thinks the number of cases in which the patient cannot be freed from his cocci is rendered exceedingly small if permanganate irrigation is practised and if extra-urethral foci be removed when they are found to exist. If the urethral and prostatic glands do not empty themselves they may contain such foci. Under these conditions, massage and expression of the prostate and urethra immediately after micturition will bring to the meatus the retained secretions of these glands, in which gonococci will be found. Disinfection of these foci is accomplished by thus emptying the glands before each lavage. Ordinarily these glands empty themselves and are not without the sphere of disinfection by the permanganate irrigation. Of course, there may be cases, as in infection of the vesiculæ seminales, in which it may be difficult or impossible to remove all foci.<sup>1</sup>

Without underrating the importance of miscarriages and the sequelæ of confinements as causes of metritis and salpingitis in young married women, and considering the enormous number of such cases, and the large number in which gonococci cannot be found in the husband, the question of secondary infection becomes of capital significance. In non-disinfectable cases in which secondary infection by diverse organisms has extended to the prostate, bladder, and possibly even to the kidneys, marriage should be prohibited just as much as in cases of uncured syphilis. In those cases in which secondary infection has been cured by immediate and proper treatment by irrigation with a solution of mercuric chlorid, the urethra is for months abnormally susceptible to invasion by diverse organisms normally present in the vagina. These organisms, after gaining vigor in the new soil of the male urethra, are capable of infecting the woman, especially at certain times when she is unusually susceptible, as after confinement and miscarriage. Therefore, if a patient marries whose urethra is entirely rid of all

organisms, but in whom this abnormal receptivity still exists, he should take certain precautions to avoid infecting his wife. After each coitus he must prevent infection of his urethra by disinfecting his meatus with a solution of 1:1000 mercuric chlorid. Moreover, if a drop of secretion appears at the meatus at any time he must cease conjugal relations until a bacterioscopic examination has been made, and, if necessary, his urethra should again be disinfected.

Janet is of opinion that these recrudescences from late secondary infections are what give rise to the quite widespread belief that gonorrhea is never cured. The matter of demonstrating the absence of gonococci and other organisms is very important. If cocci are not found in the discharge or shreds, it is not to be concluded that they are absent. A recrudescence can be induced by irrigating the anterior urethra with 1:20,000 solution of mercuric chlorid or a 1:1000 solution of silver nitrate, or, what Janet believes is just as efficacious, if gonococci are present, by having the patient drink beer. If, after repeated examinations, no gonococci are found in the purulent discharge thus induced, the glands of the prostate and urethra should be expressed, and, if these contain any foci, the retained secretions will be forced out and brought to the meatus. Furthermore, in looking for other organisms, the urine should be examined for any cloudiness of the second part which does not clear up on heating or the addition of acetic acid. If the bladder is infected, the organisms will be numerous in the sediment of the second urine. In giving a decision the recognition of gonococci arises. Guiard<sup>1</sup> considers their classic form, site, and arrangement as diagnostic, quoting Steinschneider to the effect that there is a chance of only 1 in 20 of thus mistaking various varieties of diplococci for gonococci. Like the true gonococci these pseudo-gonococci decolorize when stained by Gram's method, but, as shown by Albert Hogge,<sup>2</sup> they decolorize more slowly. Successful cultivation on ordinary media is indicative of pseudo-gonococci, while positive results with the serum of Wertheim and negative results with ordinary media are decisive in favor of true gonococci. It is only by carefully following such suggestions as the foregoing that we can hope to give reliable advice to chronic blennorrhagics who wish to marry. It is certainly preferable to be overcautious than to take the chances of the disastrous consequences that follow ill advice on this very important subject.

*The Chair of Pathology in the Faculty of the Jefferson Medical College in Philadelphia is vacant.*

<sup>1</sup> Blennorrhagie Chez l'Homme.

<sup>2</sup> Annales des Maladies des Organes Genito-Urinaires, 1893, pp. 281 et seq.

<sup>1</sup> According to Alexander (Journal of Cutaneous and Genito-Urinary Diseases, August, 1891), suppurative vesiculitis is exceedingly common, being often mistaken for posterior urethritis. The condition would be recognized in the following manner: The patient having urinated and cleared his urethra, a finger is inserted into the rectum, and, reaching with it above the vesicle, first on one side and then the other, an endeavor is made to milk out its contents. The patient now urinates a second time. If suppurative vesiculitis is present, the urine will contain pus, a little blood, and spermatic fluid.

## CLINICAL LECTURE.

## CHOREA.

BY CHARLES CARY, M.D.,

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[Clinical lecture delivered at the Buffalo General Hospital.]

THIS child is ten years old, with nothing significant in the family history. She has had scarlet fever and measles. Two years ago she was treated in the hospital for malnutrition, and also received attention from Dr. Putnam on account of some nervous trouble. After remaining in the hospital for five or six months the child went away, improved. Last November she was again received into the hospital on account of rheumatism, complicated with what, for the present, we may call twitchings, and recovered after a month. On February 26th she re-entered with the same nervous phenomena, which had returned about Christmas. There was also noticed at the time of the first examination a heart-murmur, and the girl was very anemic. The child, as you have observed, answers my questions intelligently, corroborates the information given in the history and informs me that she has St. Vitus' dance. She says that she has no pain, but that she cannot stand still. By force of will, however, she can keep still for a minute, but the movements seem more irregular after this effort. Her gait is peculiar and shows a certain lack of muscular control.

Usually, the twitchings of this disease are seen in the face, especially in children at the critical age of puberty. I remember a companion of mine in boyhood who would make a peculiar contraction of the face and mouth that led us to give him the name of "the fly-catcher." Often the earliest manifestation of the disease consists in certain uneasy movements, which lead to reprimands at school or at home for awkwardness, or what is supposed to be unruly conduct. Children are often made worse by being ridiculed and scolded for these nervous phenomena, which are not recognized as constituting a disease.

This child has a mild form of the disease. She can pick up a pin without much trouble and she can control the movements temporarily, a fact that is characteristic of mild forms of the disease and that enables us, in some cases, to distinguish it from other forms attended with tremor or spasmodic movements. If she had St. Vitus' dance in a severe degree, she would find it impossible to pick up a pin, especially when making a conscious effort in the presence of such an audience as this, and she would be unable to control the movements even temporarily. As the patient is stripped to the waist you will notice a twitching of the arms and shoulders. These movements cease during sleep, even in the worst grades of chorea, though the disease may be so severe as to make sleep almost impossible.

The disease is most likely to attack children who are ill nourished, though it does not always spare those of the wealthier classes. It is also interesting to note that the disease occurs in connection with rheumatism, as in the present example. The essential cause of the disease is not known, but it seems to be a disturbance of the central motor powers. On account of the frequency with which somewhat similar symptoms are found to be due

to small emboli, the same cause has been assigned for chorea; but this view has not been substantiated by autopsies, though we do not, as a rule, expect choreic patients to die. Last fall the child had an attack of rheumatism, beginning in October and lasting well through November. The feet and legs were swollen and the knees were red and painful, so that the girl was confined to bed for a week before she came to the hospital. On careful questioning I learn that she had these motor symptoms at that time too. I believe it is an open question whether the chorea was due to rheumatism, or whether what was here and has been in other instances called rheumatism is really a general infection due to the choreic disease. We are gradually coming to the belief that chorea is an infectious disease, or, at least, due to some indirect infection. It is not limited to the human race, but occurs also in dogs after distemper and, perhaps, occurs in other animals. In this case, as often happens, a heart-murmur was discovered. Such murmurs have been considered merely anemic; they have also been ascribed to the rheumatism to which the chorea bore simply the relation of a complication; but I believe they represent an essential choreic involvement of the heart-muscle. If we are inclined to the theory that chorea is an infectious disease, we may make a comparison with scarlet fever and gonorrhea, which involve the joints very much as does rheumatism. In all these diseases we must consider the cardiac involvement as analogous to that of the joints, as there is a similarity between the endocardium and the synovial membranes. There is no disease more frequently complicated with endocarditis than chorea—or, perhaps, it would be more accurate to say, there is no other disease consisting so distinctively in part of endocarditis. At present there is no murmur to be detected in this heart, though the first sound is loud and a little prolonged.

Rarely chorea occurs late in pregnancy, and it is then a serious malady, often threatening the life of the woman and necessitating the consideration of the advisability of inducing premature delivery to remove the source of irritation. When I was an interne in the Rochester City Hospital, a young French primigravida was admitted. Barring slight choreic movements, she was perfectly well; but during the several weeks she remained in the hospital the movements increased and her condition became grave. As the time for delivery approached she had to be confined to bed; and, in spite of our efforts to protect her, she would bruise her elbows and knees by the violence of the spasms. She actually wore the skin off from her shoulders and the hair from the back of her head by her constant twitchings and rubbing movements. The last scene was the most interesting. The beginning of labor seemed only to aggravate the choreic movements. I was alone in the hospital, so far as help was concerned, except for the presence of a good, strong nurse, of the old-fashioned type, and we were unable to hold the patient still. In her writhings she threw herself upon the floor, and she and I finally delivered the child on the floor under the bed. She left the hospital after the usual puerperium, quite restored to health.

Chorea usually tends to perfect recovery, but it is likely to recur once or twice in the course of the first year or two after the primary attack. This child suffered from chorea two years ago and has returned to us after



an attack in the interim of what was called rheumatism, but which was accompanied by twitchings, and which was, probably, choreic in its nature. Fatal cases rarely occur, but the disease is serious when it occurs in children already suffering from malnutrition and when it attacks a pregnant woman.

A hospital is not the ideal place in which to treat such a case, but in the present instance, as in too many others, the hospital is far superior to the child's home-surroundings. The treatment should be largely of a hygienic nature and the patient should be out of doors as much as possible. The child must not only be allowed an abundance of pure air, but it should be permitted a perfect freedom and should enjoy itself as much as possible. Unless the patient is more than usually susceptible to ridicule it should play with its companions and be encouraged to have outdoor enjoyment. Still it must be remembered that nervous children are likely to acquire a similar twitching, not through infection, but through imitation. The only medicine that seems to do any good, so far as the permanent relief of the affection is concerned, is arsenic. This acts by improving the nervous tone, though in what way we do not know. Iron should be combined with the arsenic when there is anemia. The usual way of administering arsenic is in the form of Fowler's solution of potassium arsenite, beginning with three drops three times a day and running up, drop by drop, to the full degree of tolerance, as indicated by a slight puffiness under the eyes, and, perhaps, by slight colicky pains and looseness of the bowels. If the muscular movements are extreme, the main dependence is upon potassium bromid. If sleep is interfered with by the choreic movements, chloral may be given, though this drug must always be administered with caution. *Cimicifuga* has had a great reputation, but I have never been sufficiently convinced of its value to try it. Electricity has also been recommended, but I have very little faith in this remedy. Bathing is often of value, and various symptoms may call for special consideration.

## CLINICAL MEMORANDUM.

### REPORT OF A CASE OF ADDISON'S DISEASE, WITH REMARKS.

BY H. W. MCLAUTHLIN, M.D.,

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HOSPITALS.

MISS ELIZABETH H., aged forty-seven years, white, a native of Ireland, resident of Canada before coming to Colorado, engaged in housework, was admitted to the Arapahoe County Hospital on May 31, 1894, in the service of Dr. Henry Sewall. The following history, taken at the time, is prepared from the hospital-records: The family history was negative. The patient was always well till the age of twenty years, when she was sick about three weeks with so-called congestion of the lungs. In 1889, when forty years old, she first noticed a discoloration on the forehead, which gradually deepened and spread over the body. She was confined to bed all of that summer, (probably from weakness, although the history does not state). She suffered from constipation and pain in the lower part of the back. From that time she had been

up and down all the time. The least exertion caused great prostration, with pain in the back and sides. The face presented a uniform, dark discoloration, with areas of much deeper brown. The color was particularly dark and uniform over the neck, forearms, and backs of the hands. On the body and lower limbs the color was lighter, but deepened again on the abdomen, over the backs of the hips, and the inside of the thighs. The tongue was streaked with dark pigment, especially on the edges, as if the patient had eaten blackberries. She complained of tenderness over the left chest and the abdomen. Nothing abnormal was discovered in the lungs. The heart-sounds were weak, but otherwise normal. The abdomen was flat, with marked aortic pulsation. The lumbar curve of the spine was increased. The urine showed a specific gravity of 1012; the reaction was alkaline; but the fluid contained no albumin or sugar. After remaining in the hospital five-and-a-half months the woman was discharged on November 14, 1894, from the service of Dr. Fisk, the record bearing the inscription "no change in condition."

During her stay in the hospital the pulse varied between 76 and 98, averaging about 84, the respirations averaging about 21. The temperature-chart showed an evening rise of from one-half to one-and-a-half degrees during a considerable portion of the time. The bowels were constipated, with occasional attacks of diarrhea. The patient was readmitted to my own service on March 24, 1895. She was then completely bedridden, while anorexia and vomiting were prominent symptoms. She was extremely weak and much emaciated. The heart-sounds and pulse were very feeble. The pigmentation had deepened, especially in small spots over the body, and it was particularly marked on the tongue. The urine was slightly alkaline, otherwise normal. The pulse was 94. In the epigastric region there was a circular area yielding dulness on deep percussion and hard and immovable on palpation. This was thought to be connected with the spine. The woman sank steadily and died April 9, 1895.

Two days later Dr. Leonard Freeman, pathologist to the hospital, performed the postmortem examination. The body was that of an emaciated white woman, between fifty-five and sixty years of age apparently, presenting marked postmortem rigidity and staining. The skin of the entire body was markedly bronzed, more especially about the hands, arms, neck, face, and tongue. The tongue was quite dark in color, while the mucous membrane of the mouth was but slightly altered, excepting for a bluish discoloration along the gums. There were a number of small dark-brown spots, like freckles, scattered over the face and body. The subcutaneous fat was unusually yellow and over the abdomen was from one-and-one-quarter to one-and-one-half inches thick, notwithstanding the general emaciation. Owing to a marked bending forward of the vertebral column a hard projection within the abdominal cavity could be felt externally. The right lung was universally bound by old adhesions, especially at the apex, where there was a nodular mass of tuberculous material, caseous and fibrous in character. The bronchial glands were enlarged and tuberculous. The left lung was also tuberculous. The heart was small and flabby, with dilated vessels, the valves negative and free from atheroma. The walls of the left ventricle were thin, while the heart-muscle was

firm and very brown in color. The left suprarenal capsule was much atrophied. There was a caseous, slightly calcareous, tuberculous nodule, the size of a hazelnut, at the internal and superior angle of the capsule; also a second small caseous nodule, the size of a pin's head. Around these nodules there was considerable fibrous thickening of the adjacent tissue, making a deposit adherent to the spine. The right suprarenal capsule was also considerably atrophied and presented two caseated nodules, each about the size of a grain of corn. The left kidney was surrounded by considerable fat and was slightly smaller than normal, while the capsule was somewhat adherent, leaving on removal a finely granular surface. The cortex was about one-fourth the usual thickness. The entire kidney was congested and in a condition of chronic interstitial inflammation. The right kidney was similar, but had more extensive adhesions of the capsule. There was no thickening of the nerves, or tumors of any kind, to be felt in the region corresponding to the suprarenal capsule. The spleen was slightly enlarged, but otherwise normal. The liver was one-fourth smaller than normal, the edges slightly rounded. Its tissue did not cut readily, and was considerably firmer than normal, while the color was darker. The gall-bladder and the bile-ducts presented no evident obstruction. The lower few feet of the small intestine were negative. The uterus was small; the ovaries and tubes negative.

Addison first described, in 1855, the disease that bears his name. He gave as the general symptoms, anemia, general weakness, especially a weak heart, together with irritability of the stomach and a discoloration of the skin. These have remained the principal symptoms, except that anemia is no longer prominently placed in the list. That the disease is rare in America is shown from the fact that Osler, in 1892, had seen only eight cases, including his work at the bedside and the post-mortem table.

Males are about twice as frequently affected as females. The age is that of young adults, or from twenty to forty years. One congenital case has been described.

In a majority of cases tuberculosis of the suprarenal capsules, and often of other parts of the body, especially the lungs, is present. In such cases the capsules are thickened and contain cheesy masses encased in thick fibrous tissue. Blows on the abdomen or over the kidneys and caries of the spine have so frequently preceded the beginning of the morbid process in the capsules as to merit an etiologic relationship.

Other pathologic conditions of the capsules sometimes found are atrophy from interstitial cirrhosis and malignant disease. The fibrous thickening that encases the capsules usually extends so as to involve adjacent nerves and ganglia of the abdominal sympathetic system, causing their compression and atrophy.

Based upon the pathologic changes mentioned, two theories are advanced to explain the characteristic symptoms of this disease: First, that, owing to the function of the adrenals being lost, the system is poisoned by the retention and circulation of some unknown substance that the adrenals should have eliminated or altered; second, that the symptoms are due to a disease of the abdominal sympathetic system, which is caused generally by disease of the adrenals, but which may also be caused by other chronic diseases involving the

solar plexus and its nerves. In support of this theory is mentioned the pigmentation of the skin seen in tuberculous peritonitis, carcinoma of the pancreas, abdominal aneurism, and so on. It seems highly probable, however, that without the adrenal disease the complete group of symptoms characteristic of Addison's sickness is never found. Both of the foregoing explanations may be correct, and both may be concerned in the production of the disease.

The first symptom to attract attention is generally the pigmentation of the skin. This varies from a light brown or smoke-color to black. It is diffuse, but is distinctly more marked on the exposed parts of the body, and where pigment is naturally present. As in the case reported, there may be small isolated spots that are distinctly darker. The face and the backs of the hands are early affected. The mucous membrane of the conjunctivæ, mouth, and vagina is pigmented. Even the serous membranes may be discolored in patches. On the other hand, an occasional case, which is otherwise typical, may show no pigmentation. Such a case is reported<sup>1</sup> by Dr. Warren Coleman, of New York. Adrenal disease was not suspected during life.

The patient was a Danish sailor, thirty-six years of age, who entered Bellevue Hospital on account of constipation. Death took place about three weeks later, without any assignable cause. During his stay in the hospital the man attracted attention only as a case of obstinate constipation, with marked inanition. No interpreter could be found, so the history was not obtained. There was marked asthenia without apparent cause. The temperature was at no time over 101°. The heart's action was feeble and the superficial circulation was poor. The constipation continued, in spite of vigorous treatment, up to the time of death. There is no record of alternating diarrhea.

At the autopsy the body was found anemic, but not much emaciated. The heart weighed nine ounces, and its walls were pale. The valves were normal. The right lung was bound to the chest-wall by a few old adhesions. The upper lobe contained several tuberculous masses of considerable size in a state of caseation, while throughout the middle and lower lobes a few small nodules were found. The left lung was in a similar condition. The bronchial glands were enlarged and cheesy at the center. The left adrenal body weighed one-and-a-half ounces. Its original shape had been entirely lost. On section it was found to be caseous, and greenish-yellow pus exuded from several points on the cut surface. The cheesy matter had become calcareous at many points. The capsule was much thickened. The right adrenal was one-half the normal size, and weighed one-half ounce. It contained one large and numerous small calcareous masses. Microscopic examination showed the process to be tuberculous. The skin and the mucous membrane of the mouth were carefully examined, but no evidences of discoloration found. No sufficient cause for death, aside from the condition of the adrenals, could be determined. The appearances presented by the adrenals left no doubt that they became infected prior to the lungs or bronchial glands.

Dr. Coleman states that he has systematically examined the adrenal bodies in all the autopsies that he has performed in Bellevue Hospital for two years (the number

<sup>1</sup> Medical Record, November 3, 1894.

is not stated), and this is the first instance in which he has found them tuberculous, although many cases showed extensive tuberculosis in other parts of the body. Unfortunately, in this case the semilunar ganglia and the abdominal sympathetic nerves were not removed for examination. The important deduction from this observation is, that tuberculosis of the adrenals, *per se*, even though both glands be entirely destroyed, is not productive of skin discoloration.

The *Medical Record* of September 9, 1894, contains the report of a case of Dr. Lazarus, of Berlin, in which a child, aged three-and-a-half years, died from a tumor of the left adrenal. The tumor represented one-third of the entire weight of the child, which was thirty-seven pounds. Sarcomatous degeneration of the tumor had begun. During life there was no discoloration of the skin. This case goes to show that malignant tumor of an adrenal may exist without pigmentation of the skin.

In Addison's disease spots of leukoderma, or absence of pigment, are sometimes seen. Gastro-intestinal disturbances, especially nausea, vomiting, and diarrhea, suddenly occurring in persons otherwise habitually constipated, are common. There is a tendency to faint, together with headache, as well as pain in the epigastrium and hypochondria. Over and above all is the marked asthenia, without which the diagnosis is uncertain, for pigmentation may occur in other diseased conditions, especially with abdominal tumors, as tubercles, carcinoma, or lymphoma. It is quite frequently seen with tuberculous peritonitis.

In pregnancy and in uterine disease patches of pigmentation are common.

In disease of the liver, and even in cases of deranged activity of this organ, patches of staining are often seen about the face and forehead. Irritation of the skin by pediculi and dirt, sometimes called vagabond's discoloration, must be remembered. In rare instances the skin has been so deeply discolored in melanotic carcinoma as to be mistaken for Addison's disease. In exophthalmic goiter patches of pigmentation and leukoderma are common.

These various sources of pigmentation must be excluded and asthenia must be present before making a diagnosis of Addison's disease. After death the abundance of fat in the abdominal wall, in marked contrast with the general emaciation, has been frequently noted. The liver and spleen are often enlarged, as well as Peyer's patches and the mesenteric glands.

The prognosis is bad. Death may occur in a few weeks, especially when bronzing of the skin is slight or absent, and great prostration, vomiting, and diarrhea are present. It would seem easy to confound such a condition with typhoid fever or acute tuberculosis. Usually, however, the disease is protracted, lasting months or even years. In the longer cases periods of improvement may occur and hope be raised as to final recovery. Sooner or later, however, exacerbations are sure to occur, and the end is always the same.

In the present state of our knowledge of Addison's disease the treatment must be symptomatic. In general it is to husband and, if possible, to increase the patient's strength.

For obvious reasons cases are seldom diagnosed until they are far advanced. At this stage quiet and, in some cases, absolute rest in bed are necessary, for sud-

den death in a number of instances has apparently taken place from syncope induced by slight exertion. The diet should be light and nutritious. Milk is often the best food. Arsenic and strychnin, iron, if there is anemia; ice, champagne, and hydrocyanic acid for the irritable stomach; bismuth for diarrhea, may all be used when indicated. If there is constipation, mild laxatives should be chosen which will not disagree with the stomach.

When the function of the adrenals shall be better understood important additions to our present knowledge of the etiology and treatment of Addison's disease will follow. Within the past two years a remarkable amount of thought has been directed to the ductless glands of the body, and the adrenals have not escaped investigation.

Oliver, especially, has been working with extract of suprarenal capsules, and has found that, in case of human beings, it is capable of producing an increase of vascular tone and a diminution in the size of the arteries. In other words, its effects are contrary to those of thyroid extract. Experimenting on animals, this investigator has shown that both alcoholic and aqueous extracts of the adrenals contain a powerful substance, which, on injection in extremely minute doses, produces remarkable physiologic effects upon certain parts of the nervous, muscular, and vascular systems.

Whether this is a useful substance, made by the adrenals from the blood, to be used as required to affect the circulatory system, or whether it is a poison carried to the adrenals for them to render harmless, is, according to Oliver, not yet known.

The therapeutic value of the animal extracts and other products of the animal system is perhaps not yet fully known or acknowledged. Enough, however, has been demonstrated in this direction to justify the hope that light will soon be shed on the treatment of Addison's disease.

## THERAPEUTIC NOTE.

### THE ANTISEPTIC TREATMENT OF TYPHOID FEVER WITH THE CHLORIN-QUININ SOLUTION.<sup>1</sup>

BY EMIL KING, M.D.,  
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IN a section of country like this one, where typhoid fever is met with a good deal every autumn, a knowledge of the most successful and at the same time the easiest treatment to carry out is necessarily very important. The younger members of the profession will bear me out in the statement that about all we are taught in regard to the treatment of this disease in the great medical seats of learning is that drugs are to be spurned and that the Brand or cold-bath treatment is the only proper thing. When, however, the practitioner in the country and smaller towns attempts to apply this method he is met by the prejudice of the laity and the expense, as trained nurses and bath-tubs are not within the means of the mass of the people. Thus we are forced to adopt some other line of treatment, and I am pleased to say that we have one that not only meets the requirements,

<sup>1</sup> Read before the Southwestern Minnesota Medical Society at the semi-annual meeting held at Fulda, July 11, 1895.



but gives better results and is more pleasant than the Brand plan.

In looking over the literature of typhoid fever for the last decade, one is surprised at the long list of drugs employed; prominent among them we find the coal-tar antipyretics and the antiseptics. Of all the various methods of treatment receiving professional sanction the one having antiseptics for its basis seems to my mind the most rational. We all know that in this disease the alimentary canal is a perfect hotbed of bacterial organisms; these are continually producing ptomaines and toxalbumins, and both clinical and experimental observation shows that these poisons are absorbed and cause many of the symptoms of the disease. It seems entirely consistent to believe that bacteria other than the specific one cause much of the putrefactive fermentation, the fever-poisons, the softening, the breaking-down and perforation of the intestinal walls. None of the advocates of the antiseptic treatment claims that we can obtain an aseptic condition of the intestinal walls, but we do claim that we can keep the bacterial growths in small numbers and a low state of vitality, and that the bacterial poisons are very much lessened and consequently are not present to be absorbed. The almost entire absence of bowel-complications among the cases treated by this method seems to prove this assertion.

The antiseptics employed in the treatment of typhoid fever are many, and several have been found of value. Among these I may mention zinc sulphocarbonate, thymol, silver nitrate, salol, and carbolic acid. The main points in selecting one of these is to get a substance that is readily soluble, very diffusible, easily absorbed, is a powerful antiseptic, and which in overdose will cause no harm. The substance that best combines these advantages is, I believe, chlorin. This gas in solution was long ago found of great value in grave forms of ulceration of the throat, and we know that the disinfectant properties of lime depend upon the action of the chlorin present. It is readily absorbed and is not irritant to the tissues. It appears to stimulate the liver, kidneys, and all glandular structures, and cleanses and disinfects the ulcerative lesions of the bowel. Chlorin is superior to all other antiseptics in the treatment of typhoid fever, because it is diffusible, stimulating to glands, aiding elimination, is readily absorbed, and, I believe, more powerful than other available antiseptics. Unlike silver nitrate, zinc sulphocarbonate, salol, and other remedies, it is not decomposed into insoluble salts, and thus does not lose its effect.

The chlorin-quinin treatment was originated by J. Burney Yeo, of London, England, and has been employed by him and others with great success for about twenty years. During last fall and winter I treated in this way twenty-three cases of typhoid fever without a death or serious complication, and I can say that these cases ran a much safer and pleasanter course than those of a year before. The solution is prepared in the following manner: Into a twelve-ounce bottle are put thirty grains of potassium chlorate, and to this sixty minims of strong hydrochloric acid added; a brownish-yellow gas is given off, and when the bottle is nearly filled with it a small quantity of water is added, the bottle thoroughly shaken, and the addition of water and the shaking being repeated until the bottle is filled. I now add the quinin, usually twelve grains. Syrup may be added in place of the water to improve the taste, though I find this un-

necessary, for after taking the medicine for a few days patients do not seriously object to the bitter taste. We now have a solution containing chlorin and other gases, potassium chlorate, free hydrochloric acid, and quinin. The quinin is added for its general antiseptic and tonic properties. We do not wish its physiologic action. It may be given to small children in some other form, though it will not act so well, or it may be entirely omitted if for any reason contraindicated. The dose of the finished solution for an adult is a tablespoonful in half a tumbler of water every two hours. This quantity may be increased or decreased as necessary, the main point being to give enough to make the stools smell strongly of chlorin, to insure its thorough action on the intestinal coats and contents. It is a good plan to direct rinsing of the mouth after the medicine is taken, to prevent injury of the teeth. As soon as my diagnosis is made I order or prepare the medicine and continue its administration until the temperature has been normal for four or five days. For country practice I carry the ingredients and prepare the solution as needed at the bedside. Of course, the best results are obtained if the case is seen early, but even late the remedy will have a good effect.

In comparing the histories of my cases, twelve in number, treated with sponge-baths and other cold applications, antipyretics, salol, turpentine, etc., during the fall and winter of 1893, with those of cases treated by the method here described during the fall and winter of 1894, I find the following points in favor of the latter:

1. The temperature is materially affected, being appreciably lowered. It seldom rises above 102.6° F. after the medicine has been administered for two days.

2. There is an almost entire absence of nervous symptoms. The so-called typhoid condition does not develop. The patient is usually able to get considerable sleep and the headache soon disappears. In a case seen during May and June, 1894, the typhoid condition was very marked, and the patient was entirely oblivious to surroundings for over a week. This case was treated with sponge-baths and zinc sulphocarbonate and salol, and though at death's door for weeks, thanks to a magnificent constitution, recovery finally ensued.

3. The general condition of the alimentary canal is much better. The foul tongue clears to some extent, so that it may even lose its peculiar character; the stomach retains nourishment better; diarrhea is seldom severe; and tympanites does not develop except over a limited area in the right inguinal region.

4. The duration of the disease is distinctly shortened and convalescence is more rapid. Many cases will show a normal temperature by the eighteenth day, few going on to the twenty-fourth. Convalescence is more rapid because the patient is not so weak. Bedsores did not develop in any of my cases last fall, while this complication occurred to me in two cases the year before.

5. Complications are fewer and the mortality is greatly lessened. In none of my cases did any serious complications appear. Two cases had slight attacks of bronchitis, but these were short and were easily controlled. Accurate statistics of the mortality under this treatment are wanting. J. Burney Yeo had seen only two deaths under this treatment up to June, 1894, and he claims to have treated a great many cases. Dr. O'Connor, of Buenos Ayres, S. A., reports one-hundred consecutive

cases, with only two deaths. In this country the only cases reported, so far as I know, are three by Dr. J. Mosley Kerr, of Columbus, Ohio, and now twenty-three by myself; all without deaths.

In beginning the treatment of a case of typhoid fever seen in the early stage the first thing to consider is absolute rest in bed. The room must be airy, the bed being placed so as to avoid drafts, although ventilation should be free. I also favor plenty of sunshine when not objectionable to the patient. The bed itself should be smooth, not too soft, and the covering need only be light. Cleanly surroundings are always to be desired. I now begin to prepare the alimentary canal, if the state of the fever does not need immediate attention, by ordering a thorough purge, giving one grain of calomel and two of sodium bicarbonate every hour until the desired result is secured, the object being to remove fecal masses and all fermenting substances. I select calomel on account of its stimulating influence on the liver and intestinal glands, and also for its antiseptic effect. The beneficial effect of the purge is shown by a drop in the temperature and a lessening of the abdominal tenderness.

In the management of a case of typhoid fever the food-question early assumes importance. It is now very general to restrict the patient to an exclusive milk-diet; from one-half to three quarts per day is the amount recommended by writers. In my limited experience I have not seen a case that would voluntarily take as much as the latter quantity. The absorbent powers of the gastro-intestinal mucosa are so much impaired that, I believe, this quantity cannot be digested. If physicians will carefully examine the stools of patients taking from three to six pints of milk, they will find that quantity passing away as the "pea-soup" stool; they will also find the curds responsible for much of the diarrhea. According to the pathology of the disease, it should be our aim to afford rest to the inflamed bowel, and to do that we must not give more food than can be digested. Any amount remaining will not only serve as a nidus for fermenting germs, but will induce peristaltic movements, thereby causing diarrhea and also increasing the absorption of noxious poisons. To make milk easier of digestion it should be diluted with water, and drunk only in small quantities at a time. When milk disagrees, buttermilk or icecream may be substituted. Home-made beef-tea and thin gruels and soups must at times be given, as all milk-preparations may disagree. I also permit the use of fruit-juices, as of the lemon and the orange; these form a pleasant addition to the limited diet-list. Tea or coffee may be permitted, as there is no good reason why the use of two such good cardiac stimulants should be prohibited. I make it a rule never to urge the patient to take nourishment as long as he is rational; of course, should the typhoid condition set in, then forced feeding may become necessary.

Of greatest importance in the treatment of typhoid fever is the internal use of water. Always let the patient have all he wants; in fact, the more he drinks the better. Drinking large quantities of water has a calnative influence on the nerve-centers; it assists in the oxidation and elimination of effete matter, the secretions of the kidneys and skin are increased, and the tension of the circulation is relieved. The internal use of water, then, tends to lower temperature, increases elimination,

and decreases nervousness. Authorities recommend that from four to six quarts should be drunk daily. My patients would not take that much, but I have them drink over two quarts with their medicine.

Usually, as soon as the temperature drops to normal the appetite returns, and we are besieged with the question, "What can the patient eat?" In practice outside of a hospital we find it difficult to keep the patient on a liquid diet for ten days after the temperature is normal. I usually begin on the fifth or sixth day by permitting the patient to eat a small quantity of toasted bread, an egg prepared according to his wishes, or other food, such as custard, oatmeal, or farina. Soon we can permit small pieces of meat and some vegetables; the diet being brought back to the normal in about two weeks.

Of the special indications perhaps the height of the fever is the most important. It is generally agreed that temperatures over 102.6° F. long continued are dangerous, by inducing depression of the vital centers and a cloudy degeneration of the muscular structures, especially of the heart. This temperature is the line, on crossing which the patient, in all well-ordered hospitals, is now plunged into a cold bath. I agree with Brand and his followers that this procedure powerfully depresses temperature, and at times may be necessary to save life; but I do not believe in subjecting the patient to it three or more times a day, when I can attain the desired result by easier and pleasanter methods. When the temperature rises above 103° F., and this is seldom, I order a cold pack, or sponging of the abdomen and chest, and cold applications to the head. Headache, which so often is due to high fever, is easily relieved in this way; some alcohol or vinegar may be added to the water applied. In cases of hyperpyrexia, when symptoms of danger are present, I should not hesitate to use the cold bath, as it may be the quickest means of saving life. The coal-tar antipyretics in occasional small doses do no harm, but I do not regard them as necessary.

The so-called typhoid condition calls for energetic stimulation; and here good brandy, ether, strychnin, and atropin are of great service. In one case (already mentioned) seen rather late in the course of the disease, I resorted, among other measures, to the rectal injection of tincture of asafetida with marked benefit. Forced feeding by the mouth or rectum may now be imperative, and water to drink must not be forgotten. It is only in this class of cases that I employ alcoholic stimulation, though alcohol is also of value in certain cases as a stomachic during convalescence.

The various parts of the alimentary canal call for constant attention. The mouth and tongue are generally in a bad condition, and frequent washing with an antiseptic solution, such as Dobell's well-known combination, is grateful to the patient. I find that unloading of the bowels, even when there is diarrhea, improves irritability of the stomach; if not, this is treated by the usual methods. Diarrhea is treated by withholding excessive quantities of food, observing the same rules as when treating a case of cholera infantum, the stools being frequently examined for undigested particles, and by the use of such remedies as bismuth salicylate, opium, etc. Opium-suppositories are of benefit to allay tenesmus and at times to induce sleep.

Overfeeding is, I believe, largely responsible for tympanites. The internal administration of oil of turpentine



and oil of anise will usually relieve the distention; rectal injection of asafetida and glycerol will also be found of benefit; and in extreme cases the passing of a rubber tube into the bowel or even puncture may be resorted to. But these extreme cases are usually fatal. Constipation may be relieved by the use of castor-oil or some other gentle laxative. I am satisfied if the patient has one stool every other day, provided, of course, no symptoms referable to this cause appear. During convalescence the mineral acids and bitter tonics, of which strychnin is the best, are of benefit. In cases of protracted convalescence the internal use of oil of turpentine, as advocated by George B. Wood, is one of the best remedies. I shall not in this article touch upon the complications of typhoid fever.

I cannot resist the temptation of comparing, as I see it, the comparative value of this antiseptic and the Brand method of treatment. The antiseptic plan, intelligently carried out, follows closely the pathology of the disease. We aim to prevent as much as possible the formation and absorption of toxic substances; we keep the alimentary canal comparatively empty, and hence do not have the fermenting and macerating effect on the intestinal ulcers. By doing this we avoid perforative complications, which are so largely responsible for the mortality. Under this treatment the temperature does not often rise above the bath-line; hence this measure is seldom needed. The duration of the disease is materially shortened and convalescence is more rapid. These are the reasons why the general results under this treatment are better than under Brand's. The mortality under the Brand treatment in this country varies all the way from 3 to 16.6 per cent., relapses occurring in about 13 per cent. of all cases, and the duration of the disease being about forty-four days, the most surprising thing being the large number of relapses. I consider the Brand treatment open to the following objections: It is a symptomatic treatment entirely, losing sight of the pathologic indications, as rest and diet, through the bugbear, fever. As at present carried out, the patients are indiscriminately subjected to the same measures, that is, a dose of brandy, ice-water to the head, and immersion in water at a temperature of 70° F. for from ten to fifteen minutes, with friction of the body. Otherwise the patient is treated symptomatically and large quantities of milk are forced upon him. In small towns and in the country this method is difficult to carry out, the nurse usually being some overworked member of the family. Bath-tubs are not found in most of the houses, and they are expensive, though portable ones are made which the physician can purchase for use by his patients. Another important objection is the opposition of the laity, as very many people regard it as little short of barbarism to take a fevered patient from his bed and plunge him into a cold bath. From the outline of treatment given, it may be seen that I do not object to hydrotherapeutics under certain circumstances, but I strongly urge a combination of the valuable points of each, and to treat the disease under consideration, not by its symptoms, but in the light of our present knowledge of its pathology. Does it not seem right to direct treatment to the point where the fever-poisons are generated and thus make a cold bath unnecessary? Those who try it will be sure to see the picture of the disease change for the better.

## MEDICAL PROGRESS.

**Excision of the Rectum for Malignant Disease.**—HEUSTON (*British Medical Journal*, No. 1795, p. 1141) describes an operation for excision of the rectum for malignant disease that he has performed in two cases, and for which he claims that it preserves the normal functions of the bowel, that subsequent stricture is not so liable as after the usual operation, while convalescence is rapid, the mortality is low, and the disease is no more liable to recur than after more extensive operations.

An incision is made from the rectum to the coccyx, which, being in the median line, severs the attachment of the external sphincter and levator ani muscles to the ano-coccygeal ligament. The rectum is now separated from the surrounding cellular tissue and clip-forceps are applied to the rectum at the commencement of the ampulla, below which the bowel is divided. The attachments of the levator and sphincter muscles to the bowel are thus not interfered with and hemorrhage is restrained. The rectum being now completely divided above the internal sphincter, there is not much difficulty in bringing it downward and backward through the median incision, its separation from the prostate and the base of the bladder being facilitated by having to draw it backward. Clip-forceps are applied above the diseased portion, which is removed by scissors. The upper portion of the bowel is fixed by deep sutures, attaching it, about an inch above its cut extremity, to the recto-vesical fascia and levator ani and the peritoneum. In applying these sutures, care should be taken that the mucous coat of the bowel is not penetrated. A second row of sutures is applied between the cut extremity of the bowel and that portion which had been originally left below; these sutures should penetrate the entire thickness of the bowel in both instances. The object of the upper row of sutures is so to fix the bowel as to obviate the danger of the sutures uniting the cut extremities of the bowel tearing through. The incision from the anus to the coccyx is now closed, the most anterior sutures including the posterior aspect of the bowel, but not penetrating the mucous coat. The levator ani and sphincters will thus have their normal relation to the extremity of the bowel preserved. It might be thought that the lower portion of the bowel is in danger of sloughing, owing to the superior and middle hemorrhoidal arteries being cut away from it, but the hemorrhoidal branches of the pudic arteries are sufficient to maintain its vitality.

**Chloroform-anesthesia.**—As a result of a study of the question of chloroform-anesthesia, BRUNTON (*Lancet*, Nos. 3750 and 3751) has arrived at the following conclusions: Experiments on animals have conclusively shown that chloroform given by inhalation and not blown artificially into the lungs kills by paralyzing the respiration. Clinical observation has shown that cases of simple danger without death during anesthesia are due to failure of the respiration. Cases of death may arise from the same cause, but may also be due to stoppage of the heart (syncope) or to stoppage of the heart and respiration together (neuroparalysis). The most common cause of neuroparalysis has been found by Caspar to be throttling, strangling, and drowning, which kill by neuroparalysis as often as by asphyxia. Anesthetics have no



tendency to produce neuromyolysis except when they are given in such a manner as to irritate the respiratory passages, either mechanically or chemically. On the contrary, they tend to lessen shock. During imperfect anesthesia, both at the very commencement of administration of an anesthetic or during recovery from its influence, choking may occur and cause death by neuromyolysis as well as by asphyxia. The neuromyolysis is the result that is most to be dreaded, as simple asphyxia may usually be recovered from if artificial respiration be maintained. It is, therefore, most important in the administration of anesthetics to avoid anything that is likely to interfere with respiration, as such interference may act like throttling and cause death by neuromyolysis. During complete anesthesia, the reflexes being almost or entirely abolished, there is little risk of neuromyolysis, but the nerve-centers being weak there is more of asphyxia. At the commencement of administration and during recovery, when the reflexes are present but may be deranged, the danger of death from neuromyolysis is greatest, and the respiration then requires to be watched with especial care. Although there may be no objection to the anesthetist keeping his finger on the temporal artery, and thus unconsciously watching the pulse, yet the respiration must be his main care, and anything that will withdraw his attention from it is studiously to be avoided.

**Monarticular Rheumatism.**—HEIDENHAIN (*Deutsche medicinische Wochenschrift*, 1895, No. 31, p. 496) calls attention to the occurrence of cases of articular rheumatism with involvement of but a single joint, and an absence of manifestations of an acute febrile disorder. Pain is present usually, but in slight degree. Other causative affections, such as traumatism, gonorrhea, osteomyelitis, tuberculosis, syphilis, were with certainty excluded and relief was afforded by the administration of full doses of sodium salicylate. In the cases observed the shoulder-joint was most frequently involved; then in the order of frequency the wrist, the elbow, and the ankle. In an additional number of cases two joints were similarly involved. The question is raised whether an insidious endocarditis may not develop in the course of attacks of this kind.

**A Tubercle of the Intima of the Aorta.**—At a recent meeting of the Société de Biologie, HANOT and LEVI (*Compt. Rend. Hebdom. des Séances de la Soc. de Biologie*, 1895, No. 22, p. 471) reported the case of a man, sixty-one years old, dead of tuberculosis, in which at the upper part of the thoracic aorta in the interval between the origin of two intercostal arteries was found a tubercle, of roundish form, grayish color, firm consistency, the size of the head of a pin, and slightly projecting within the lumen of the vessel. Upon section this was found to be a true tubercle, free from vessels, presenting a few giant-cells, together with tubercle-bacilli. The formation was evidently of recent development. Its center was in process of caseation. It was developed in the subepithelial layer of the vessel at the level of the fibrillar substance, which formed about it an incomplete sheath.

**Diplococci in the Blood of Patients with Scarlet Fever.**—CRAJKOWSKI (*Centralblatt für Bakteriologie und Parasitenkunde*, B. 18, Nos. 4 and 5, p. 116) has reported the results of examinations of the blood in thirteen cases of scarlet fever, in which he found, both upon direct ex-

amination and upon culture, diplococci, such as he had not observed in a large experience under other conditions. The organisms stained with difficulty, and were readily decolorized. They did not stain by Gram's method. A capsule could not be discovered. The organisms developed readily upon various culture-media. Inoculations of pure cultures were pathogenic for mice, and the same diplococci could be isolated from the blood of these animals.

**Gangrene of an Extremity in the Sequence of Typhoid Fever.**—QUERVAIN (*Centralblatt für Innere Medizin*, 1895, No. 33, p. 793) has reported the case of a man, twenty-five years old, in which in the course of an attack of typhoid fever gangrene of the right lower extremity set in, eventually requiring amputation above the knee. The patient ultimately recovered. On examination of the amputated member the popliteal artery and vein were found occluded by thrombi, and an abscess in the muscular tissues below the knee. Examination of the pus from this collection disclosed the presence of typhoid-bacilli.

## THERAPEUTIC NOTES.

**In the Treatment of Frost-bite** BOECK (*Monatshefte f. Praktische Dermatologie*, Band xxi, No. 4, p. 171) recommends the following formula:

Take—Ichthyol	} of each . . .	1.00
Resorcin		
Tannic acid		
Water . . . . .		5.00—Mix.

Apply with a brush at night.

Should this for one reason or other be objectionable, the following formula may be substituted:

Take—Resorcin	} each 5.00	2.00
Mucilage of gum arabic		
Water . . . . .		
Powdered talc . . . . .		1.00—Mix.

Apply topically with a brush.

**Urotropin** is the name given by NICOLAIER (*Deutsche medicinische Wochenschrift*, 1895, No. 34, p. 541) to hexamethylenetetramin because of its influence upon certain urinary constituents. He has found this agent in solution, as well as the urine of patients to whom it was administered, capable of dissolving uric-acid concretions. The substance appeared also to check ammoniacal fermentation, the urine of individuals using it remaining perfectly acid, and in some instances it acted as a diuretic. An antiseptic effect was also observed. The drug has been successfully employed in the treatment of cystitis. The doses given ranged from seven-and-one-half to ninety grains daily. Large doses were attended with a sense of burning, referred to the bladder on micturition.

**For Pulmonary Tuberculosis.**—Take

Calcium phosphate . . .	} each 4 grains.
Menthol . . . . .	
Sodium bicarbonate . . .	} each 3/4 grain.—M.
Powder of nux vomica . . .	
Iron lactate . . . . .	

To be taken four times a day with food. MARAGLIANO—*Journal des Praticiens*, July 27; *Med. Chron.*, August, 1895.

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SATURDAY, SEPTEMBER 14, 1895.

## INEBRIETY.

DR. NORMAN KERR is among the foremost of those who regard inebriety as a disease. He has written an elaborate treatise on this subject, and the third edition of this work, now before us,<sup>1</sup> is undoubtedly the most representative work on the subject in the English language.

The difficulty that we experience in following Dr. Kerr is chiefly in grasping firmly his idea of what really constitutes the disease which he denominates "inebriety." This term, as connoting a distinct morbid entity, has always been somewhat of a will-o'-the-wisp to us, and we confess that it remains so after a study of Dr. Kerr's book. We do not wish to appear to be behind anyone in recognizing the baleful pathologic effects of alcohol upon the human system. That it is a most potent poison, with well-recognizable anatomic changes in its train, is among the fundamental facts established by modern pathology. Just as syphilis, gout, and rheumatism work their characteristic havoc upon tissues, so does alcohol. This fact goes without saying. But the method of approaching the study of the effects of alcohol differs with some

writers, among whom Dr. Kerr is prominent, from that which is customary and legitimate in the study of the effects of these other pathogenic substances. It is this distinction that we wish to point out, because it is emphasized to our mind in Dr. Kerr's book.

This distinction may be said to be shown in the fact that Dr. Kerr and his followers take an *apriori* view of inebriety. The approved methods of modern science lead to a study of particulars, and from them to the formation of a general conclusion. We study symptoms first before we begin to construct a picture of a disease. The ravages of syphilis have for years been depicted by master-minds until now we have a tolerably distinct clinical picture of what is meant when we speak of a syphilitic patient. The same statement may be made of the ravages of alcohol as studied by the general pathologist. The effects of the poison on nervous, gastric, hepatic, and renal tissues are recognizable; they constitute, in a sense, a morbid entity—the complexus of the results of the action of the poison.

This method of study is not exactly that of the followers of Dr. Norman Kerr, although they avail themselves of it as an adjuvant to their own lucubrations. Dr. Kerr, as we have said, pursues primarily an *apriori* method. He constructs, first of all, the image of a disease, and then he groups about it the findings of pathology. This prior image is the hypothetical entity which he calls "inebriety." This disease, if we read Dr. Kerr correctly, is pre-existent to the specific effects of alcohol. It may, in fact, although the expression seems paradoxical, exist entirely independent of indulgence in alcohol. It is something innate in the subject—a potentiality, a pathologic analogue to original sin. This seems to us to be rather a theologic or metaphysical method of contemplating disease. The *corpus morbi* pre-exists in the tissues, based upon heredity and fortified behind the postulate that the sins of the fathers are visited upon the children to the third and fourth generations. A tippler *in embryo*, the unlucky wight grows into a sot *in posse*, lives as a drunkard *in essentia*, and may or may not become a guzzler *in esse*; but all the time he is an "inebriate." We are not aware of any other department of medical science in which this method is followed, except by some extremists in psychiatry and by some of the apostles—now much in evidence—of that "abnormal man," Lombroso. Hence we judge that this scheme is worthy of note.

<sup>1</sup> Inebriety or Narcomania; Its Etiology, Pathology, Treatment, and Jurisprudence. Third edition. New York: J. Selwin Tait & Sons.

Let us insist here, however, that we do not intend to disparage a fair interpretation of the doctrine of heredity; or of the science that finds in vicious propensities, as displayed in some individuals, the signs of a psycho-neurosis. The inherited tendency to alcoholism is an undoubted fact in many inebriates, and furnishes one of the most important though obscure problems of this grave question. This tendency has a somatic basis, and science may claim as her legitimate function the investigation and establishment of the marks of this species of obliquity. We merely hesitate, at this stage of our knowledge, to erect upon a mere tendency or appetite, however closely allied that may be to the morbid impulses of degeneracy, a distinct morbid entity and label it as a disease.

These difficulties have surrounded Dr. Kerr in his attempts to describe and to define "inebriety." He naturally finds the closest parallels of inebriety in insanity, and points out the resemblances of the various effects of alcohol, as acute intoxication, delirium tremens, *mania a potu*, and the persecutory delusions of the chronic drunkard, to the various symptoms of insanity. These resemblances, however, do not prove an identity. These more or less evanescent effects of alcohol are surely not the symptoms of a constitutional malady, else every man who experiences them must be, in Dr. Kerr's sense, a constitutional "inebriate."

So, too, of the anatomic changes produced by alcohol. If inebriety is the constitutional and hereditary malady described by Dr. Kerr, it has existed *prior* to the establishment of the degeneration of the tissues caused by alcohol. These are only the after-effects of the disease, its sequelæ. The study of the disease as an hereditary neurosis must be pursued along other lines. Cirrhosis of the liver can hardly be regarded as one of the symptoms of "inebriety."

It is but fair to Dr. Kerr to say that he has undertaken an exhaustive study of the etiology of inebriety; and in this respect he has made valuable contributions to our knowledge, and has done much toward establishing this subject upon a scientific foundation. His book is rich in data that go far to enlighten the student upon the subject of the drink-habit.

From the practical standpoint of treatment and jurisprudence Dr. Kerr's book is deserving of all praise. Both as a therapist and as a philanthropist his aims and his attainments lift him far above the

level where he can be seriously affected by a discussion of mere terms; and although we have concerned ourselves here briefly with such a discussion, which we deem fair and advisable, we are not unmindful of the highly important work of one whose name is forever honorably associated with an enlightened and scientific attempt to combat the grave curse of drunkenness.

#### INDIVIDUALISM.

MEN are a good deal alike; both physiologically and psychologically. We have come to count with confidence upon finding the trunk of the ulnar nerve just under the internal condyle at the elbow in subjects of all ages, races, and sizes, and to rely upon the effect of castor-oil in any alimentary canal of whatever length or capacity—and upon such generalizations of similarity science is based. Ninety-nine men out of every hundred exposed to certain stimuli, either physical or mental, will react in exactly the same manner. This fact enables us to lay down rules of treatment which will be found to apply to the vast majority of our patients. We must, however, remember that the "average man," like the "typical case," does not exist outside of the text-books. In any given case it is always an individual and not a mere unit that we have to deal with.

The naturalist sometimes speaks as if it were a wonder that organisms tend to vary. But to one who studies any given form closely enough the wonder is that beings of such marked individuality succeed in resembling one another so closely. Take the leaves of a forest, for instance. At first glance they appear as one uniform mass of specks of verdure, but on closer view they are found to present striking differences, which divide them into oak-leaves, ash-leaves, etc. Then, on closer study still, the leaves of each maple-tree are found to be different from those of every other member of its species; and finally of a thousand leaves on the same branch of any single tree, absolutely no two are exactly alike in color, shape, and veining. The same is true of the human species. At first glance all its members are extremely similar, especially if they happen to belong to a race or tribe with which we are but little acquainted. Most Caucasians on first acquaintance declare that all Chinamen are exactly alike, and the same statement is often heard from persons of Northern birth in regard to negroes. A very brief residence among



either race is, of course, sufficient to dissipate any such idea.

We have grown quite accustomed to the fact that even among persons of the same race, age, and social condition, the countenance varies so greatly that no two faces are the same, and not once in five-thousand individuals does even sufficient similarity of features occur as to cause persons to be mistaken for one another. Even among children of the same father and mother it is extremely rare for family-likeness to prevail to such an extent as to cause confusion among intimate friends, although it may often do so among strangers. The marvel really is that we succeed in being so much alike.

One of the most extraordinary proofs of the intenseness and minuteness of our individualization is the arrangement of the cutaneous papillæ upon the pads of the fingers and thumbs. These are usually grouped in curious concentric whorl-like lines, and, almost incredible as it may seem, are never arranged in the same pattern in any two individuals. So widely and persistently do they differ that Galton has recently proposed to use them as a means of identifying criminals and soldiers, and he has drawn up a scheme of classification of them for that purpose. This has just been investigated by a committee appointed by the British Government, which has made such a favorable report upon it that it will probably be put into actual practice very shortly by the English police-authorities. The principle itself is not new, for a similar method of identification has been in use in China for centuries; but the application and system of classifying are extremely ingenious. By means of it a given finger-point can be identified with its fellow in a collection of several thousands in a few minutes. Instead of the troublesome, unreliable, and cumbersome photographs of the "rogues' gallery," the criminal's portrait is taken by simply smearing the tips of his thumb and finger with lampblack and pressing them upon a sheet of white paper, which can then be classified and filed. No amount of dodging or grimacing will avail to distort that "mug," as he expressively terms his countenance or portrait. It is said that the value of the method has been shown in a most dramatic manner by the conviction of a murderer from the print of his bloody fingers on the white wall above his victim.

It would thus appear that we are very literally individual *aux bout des ongles*, as the French say, "to the tips of our fingers." And does not this individu-

alization extend to the alimentary canal, the vascular system, the whole organism, in fact? Some of our throat-cases can be recognized almost as readily by their fauces as by their faces and family-likenesses traced in the same region. No two ears are exactly alike, and, next to the eyes and mouth, the ear furnishes one of the most accurate signs of temperament and tendencies that we possess.

This individuality is not merely anatomic, but functional as well. The numerous cases that have been reported, and some of them seen personally by all of us, of severe toxic symptoms from a whiff of cocain-spray; of acute distress from a tenth of a grain of morphin; of gastric crises, and profuse urticarial eruptions following a single grain of quinin, are living proofs of it. So, also, are the cases in which acute toxic symptoms are invariably produced in certain individuals by the ingestion of the smallest quantities of strawberries, of clams, of veal, of apples, nay, even of eggs and of wheat-flour. Probably one-third of our patients will tell us that they "can't eat" some article or other of ordinary diet on account of the almost poisonous effects produced by it. Literally, "What is one man's meat is another man's poison." The "personal equation" is one of the most important factors in therapeutics, and we must ever bear in mind the old rule to treat the patient, not the disease.

## EDITORIAL COMMENTS.

"If Christ Came to Chicago?"—When a well-known journalistic mountebank wrote a book with the foregoing title he little thought how soon his imagined touchstone would be actually applied. According to many faithful believers, Christ, or, at least, his healing power, has already come to Chicago incarnate in the person of one John Alexander Dowie. The World's Fair was his Feast of the Passover, on the occasion of which he came down to the great city, and his method of teaching is by the billboard, the ten-foot sign, and the illustrated broad-sheet, instead of by the parable and the lilies of the field, but his spirit and results are said to be identical with those of the Nazarene. The blind do hear, the dumb see, and the lepers have their tubercle-bacilli demonstrated unto them. Thousands of witnesses stand ready to testify that they have been healed, by the laying on of Mr. Dowie's hands, of every disease that their imagination could suggest, and some of them of several diseases. For instance, a whole congregation declare upon oath that in the healing, in their presence, of a woman who was partially blind, "with the falling of the scales there also came a visitation which stripped the body of locomotor ataxia." This document can, however, hardly be considered as fully authenticated, as neither the eye-

scales nor the peelings of locomotor ataxia are appended thereto as evidence, in properly certified envelopes.

One believer certifies that he was cured instantly of "rheumatism, hernia, kidney and liver disease, and the tobacco-habit;" another lost at one fell swoop "a number of internal cancers, tumors, etc.;" and yet another, "many diseases, including heart-disease, lung-disease, spinal irritation, iritis, and paralysis." It is really to be doubted whether the shock of having so many removed at once might not prove serious to delicate constitutions. More marvellous yet, three or four enthusiastic converts declare that one of their legs has been lengthened from three to four inches, but unfortunately they fail to state whether they were "pulled" or what means were used to secure the result. One of these had been "marked for the grave by all the doctors," after the well-known habit of the medical profession. Other than this, however, there is not a scrap of evidence of any scientific value as to the genuineness of either the cures or the diseases. One woman quotes Dr. Sanger Brown and "an association of physicians, some sixty in number," as authority for the fact that she had "idiopathic muscular atrophy." But Dr. Brown has no better taste than to come forward and say that she had only a "most serious attack of hysteria"—just as if anyone would take his word against that of a lady, in a matter of this sort.

But this is a faithless and an unfeeling world, and, incredible as it may seem, in spite of hundreds of such pathetic testimonials as the foregoing, Mr. Dowie's neighbors on Edgerton Avenue are bringing suit for his removal as a nuisance. They advance the sordid and heartless claim that the continual procession of the halt, the maimed, and the blind destroys the comfort of their homes and depreciates the value of their real estate. 'Twas ever thus since the days when the devils were driven into the herd of swine; "the people of that country besought Him that He would depart out of their coasts." And if pork instead of real estate had been affected in Chicago, something much more drastic than a mere legal injunction might have been resorted to. It was more than suggested in Mr. Stead's book that Christ might not find Chicago an altogether desirable place of residence, but that Chicago would bring suit to have Him abated as a nuisance; reality has brought a plight beyond the power of even his flatulent imagination.

The moral of this little episode is simply that, with all their credulity, all the laity cannot be "fooled all the time." The charlatan, under whatever mask of sanctity or of science, will be surely discovered sooner or later. There is only one set of laws for this universe, and fraud will surely be detected and punished, either under the moral, the scientific, or the commercial code, and generally under all three.

*The Revival of the Index Medicus.*—We are informed by Mr. George S. Davis, who has hitherto so generously supported the burden of publishing the *Index Medicus*, that in addition to the forty-eight subscriptions at \$25 each, noted in THE NEWS of August 31st, there were received up to September 5th, inclusive, the following twelve:

Albany, N. Y.: Melvin Dewey (New York State Library).

Ann Arbor, Mich.: Medical Department University of Michigan, Victor C. Vaughan, M.D., Dean.

Baltimore, Md.: Dr. Charles O'Donovan.

Buffalo, N. Y.: Dr. F. W. Henkel.

New Orleans, La.: S. W. Deland (Orleans Parish Medical Society).

New York City, N. Y.: Dr. Fred. H. Wiggin.

Paris, France: Dr. Charles E. Sajous.

Philadelphia, Pa.: Dr. John B. Roberts, Dr. E. E. Montgomery.

St. Joseph, Mo.: Charles Wood Fassett (Secretary American Medical Publishers' Association).

San Francisco, Cal.: Dr. D. W. Montgomery (San Francisco Medical Society).

Syracuse, N. Y.: Dr. Henry L. Elsner.

The following additional list of seventeen has been received by Dr. J. S. Billings up to September 6th, inclusive:

Albany, N. Y.: Dr. Samuel B. Ward.

Brattleboro, Vt.: Dr. Henry D. Holden.

Cleveland, Ohio: Cleveland Medical Library, Dr. Dudley P. Allen, Dr. Henry K. Cushing.

Edinburgh, Scotland: Mr. Young J. Pentland, Pubr.

Lille, France: Bibliothèque Universitaire.

Paris, France: Dr. Charles Richet.

New York City: New York Academy of Medicine, Dr. George T. Elliot, Dr. Willy Meyer.

Philadelphia, Pa.: Dr. W. W. Keen, Dr. J. William White, Library Pennsylvania Hospital, Dr. William B. Van Lennep, Carl V. Vischer.

St. Paul, Minn.: Dr. C. A. Wheaton.

Now that medical men are returning from their summer holiday, that the medical colleges are reopening, and that the medical societies are resuming their meetings, the necessary list of 200 subscribers to insure a resumption of publication should soon be completed. Failure in this direction would be discreditable to say the least. Subscriptions should be sent without delay to Dr. John S. Billings or Dr. Robert Fletcher, at the Library of the Surgeon-General's Office, U. S. A., Washington, D. C., or to Mr. George S. Davis, Detroit, Mich.

*Medical Competition and Pictures.*—Every person has been amused, as well as disgusted, by the rage for illustrations that has seized upon the community. The old-time advertisements of the powers of the actor or the virtues of some nostrum are now replaced by portraits and illustrations infinite in number and variety and execrability. The "regular" profession is imitating the quacks in this respect, and catalogues, prospectuses, and reports of sanitaria and hospitals may contain more pages of pictures than they do of text, and what little text there is is largely taken up with lists of the apples, clothing, potatoes, etc., contributed, the forms of bequests, the appeals to endow free beds, the records of gifts and expenditures, and all that and all the rest. We have before us the report of a large hospital for the insane, which in about forty pages has twenty-three illustrations of the buildings, grounds, parlors, bed-rooms, corridors, painting-rooms, dining-rooms, gymnasias, and what not more. Evidently, wealth, luxuries, flowers, and elegance galore are here the reward of insanity, and certainly no other institution can compare with this! Charity, civilization, and science here clasp hands in a bond of union. But we cannot help wondering by what right money given for the cure and care of the insane and the

sick is expended in photographing, engraving, and printing expensive illustrations like these. Making a business out of charity, money-making by begging, is evidently a growing and significant habit, not only of the tramp but also of the physician. We have public laws against begging—but it is plain that there are beggars and beggars.

**The Names of Journals.**—We wish mildly to protest against the growing custom of dubbing a journal by some other name than that it has given itself. It is one of the privileges of freedom that a man may be allowed to have the name he chooses, or that was chosen for him by his parents. It is a bit of unnecessary work to write and print supernumerary words as the title of a journal. If one wishes to learn where a journal is printed or where its editors and publishers live, these objects should be easy of fulfilment, but in mere quotation why say *The London Lancet*, *The New York Medical Record*, etc.? The names of these journals are not those given. Titles are long enough at best. At the present rate of progress we shall soon have to say *The Chicago Journal of the American Medical Association* and *The London British Medical Journal*, and eventually the street addresses may have to be added to the title. We are simply tired of seeing quotations from a worthy journal given as from *The Philadelphia Medical News*, when, of course, there is but one *Medical News* in the world.

**The Vitapath and the Law.**—It is pleasant to chronicle the fact of lay indignation at the enormity of quackery. It seems that in Cincinnati a man died without medical attention other than that of a "vitapath," who was arrested and fined for practising without a licence. The *Cincinnati Medical Journal* says:

In imposing sentence Judge Dustin denounced the Campbells. He said: "Men who knowingly go into a sick-room and prevent anything being done for a dying man by silly incantations and laying on of hands, are responsible for his death, and ought to be on a par with a murderer in the eyes of the law. God help the dying man who relies upon you or any of the so-called graduates of his quackery. You speak of vitapathy being of a higher power than medicine, and you say you ordain ministers at the same time you matriculate vitapathic physicians. Your methods are an insult to intelligence, their practice is a criminal abuse of ignorance, and your college a disgrace to civilization."

## REVIEWS.

**THE SCIENCE AND ART OF OBSTETRICS.** By THEOPHILUS PARVIN, M.D., LL.D., Professor of Obstetrics and Diseases of Women and Children in Jefferson Medical College, Philadelphia. New (3d) edition. Octavo, pages 677. Cloth, \$4.25; leather, \$5.25. Philadelphia: Lea Brothers & Co., 1895.

THIS, the third edition of Parvin's *Obstetrics*, will be appreciated by the student and practitioner, as well as by the specialist, on account of its concise and comprehensive treatment of the subject as it stands to-day. The most notable feature of the present edition is the arrangement, the author dividing his subject into two parts, the first including the physiology, from the beginning of pregnancy to the end of the puerperal state, and the second the pathology, treated according to the differ-

ent periods. The therapy of the second part includes the important surgical procedures that have increased in prominence since the appearance of the earlier editions of the work. The arrangement noted is equally convenient with that usually adopted, and is, at the same time, more comprehensive and scientific. Specifically we would call attention to the description of Pinard's method of dislodging the foot in what the author calls the femoral variety of pelvic presentation; and to that of the mechanism of rotation in occipito-posterior positions of the head, in which the back of the child must be included among the determining factors in anterior rotation; also to the added series of illustrations, especially those included in the chapter on ectopic pregnancy, which, in itself, is a comprehensive *résumé* of the subject.

The absence of a more complete treatment of the bacteriology of puerperal septicemia is, perhaps, to be accounted for by the importance this branch of the subject has assumed as a special study rather than by a want of appreciation of its value in this connection.

One of the most valuable features of the present edition is the complete list of references appearing with the subject-matter in the body of the book. The author's bibliographic knowledge and his extensive obstetric experience and literary ability have been brought to bear in maintaining his work in the front rank among the most practical and scientific medical books of the day.

The care with which the cuts and plates have been executed and the general style of the work call for a word of appreciation for the efforts of the publishers.

**LE PHÉNOL SULFORICINÉ DANS LA TUBERCULOSE LARYNGÉE.** Par ALBERT RUULT.

**PHENOL SULFORICINATE IN TUBERCULOSIS OF THE LARYNX.** By ALBERT RUULT, M.D. Paris: G. Masson, 1895.

PHENOL SULFORICINATE is a liquid composed of phenol dissolved in sodium sulforicinate by means of a water-bath at a moderate heat. According to the number of parts in 100 of phenol (sodium sulforicinate forming the balance) the solution is designated as 20, 30, or 40 per cent. That which is found to be of the greatest service as a topical application in tuberculosis of the larynx is the 30 per cent. solution. The 40 per cent. solution should be used only in exceptional cases, when the larynx is very tolerant, and presents deep fissures or crateriform ulcerations. The application is made by means of a cotton-wad under laryngoscopic guidance, and the contact with the lesion must be exact. In order to obtain quick tolerance on the part of the larynx it is well to precede the application of phenol sulforicinate by that of an aqueous solution of cocain. After a few applications the cocain may be omitted. There is said to be little nervous reaction. In a few cases slight spasm of the glottis may occur. Excellent results are reported in a large number of cases seen since 1889. Any recommendation made by one of sufficient experience and authority for the amelioration of an affection so painful and resistant as tuberculosis of the larynx deserves careful consideration; and from the evidence brought forward in this brochure we believe that Dr. Ruault has made a decided contribution to therapeutics. The tone of his writing is that of a careful and modest observer.



It is, therefore, deserving of attention, and his method should be put to extended trial by those having the opportunity to do so.

## CORRESPONDENCE.

### WHAT NEXT?

To the Editor of THE MEDICAL NEWS,

SIR: A new edition of a non-technical reference-book, *Johnson's Cyclopaedia*, is at present being published, accompanied by much newspaper eulogy and a vast amount of advertising. It is notorious, of course, that the general public knows very little of technical questions, and general cyclopedias are intended for its enlightenment.

Turning to the word "Eclecticism" (vol. ii, p. 905), we find that "Dr. Robert S. Newton, of New York (1818-1881), first inculcated the doctrine of cellular pathology in 1845, and also introduced the antiseptic treatment in surgery in 1846. . . ."

Being under the foolish delusion that Virchow was the originator of cellular pathology, I looked up the eminent German scientist's name in the old edition (vol. iv, part 2, p. 1167), the letter "V" not being ready in the new issue. To my surprise I found these words: "He is the creator of the cellular theory in pathology" (1858).

Under "Lister" (new edition, vol. v, p. 295), the statement appears that Sir Joseph Lister is the founder of antiseptic surgery.

As I had never had the advantage of hearing of the existence of so eminent an investigator as Dr. Robert S. Newton, referred to by the writer of the article upon eclecticism, I looked for his name among the other illustrious Newtons, but found that, celebrated as he must have been, the editor of *Johnson's Cyclopaedia* had omitted to insert his biography!

In the article upon "homeopathy" the assertion appears that "in Europe homeopathic physicians are not known as such. Many 'regular' physicians practise homeopathy."

The legal lore contained in this new reference-book, however, entirely eclipses the words of wisdom that appear under "homeopathy" and "eclecticism." The article upon "executor" informs the reader that "by the law of England an infant can act as executor after the age of seventeen." As this has not been the law of England for ninety-seven years (see 38 George III, Chapter 87, Section 6), one would suppose that the proprietors of the cyclopaedia had had an opportunity of discovering that the common law had been altered.

Dr. Pepper, of Philadelphia, is the nominal editor of the medical department of the new Johnson; but nobody outside a lunatic asylum would suppose that the articles upon "eclecticism" and "homeopathy" appeared with his knowledge or consent. What editors are for, if not to edit, is a mystery that the Johnson Company might condescend to explain.

It is asserted that the well-known firm of Appleton is the real owner of the new cyclopaedia, and one is, therefore, tempted to ask how it comes that so reputable a publishing-house permits a reference-work for the benefit of the general public to contain statements that have no foundation in fact.

Respectfully,

LAWRENCE IRWELL.

76 W. TUPPER STREET, BUFFALO, N. Y.

## NEWS ITEMS.

"Fake" Hospitals.—To control the establishment of so-called "fake" hospitals the following ordinance has been presented to the Councils of Chicago:

SECTION 1. That it shall be unlawful for any person, firm, association, or corporation other than the regularly constituted authorities of the State of Illinois, or the county of Cook, or the city of Chicago, to open, conduct, manage, or maintain any hospital as hereinafter defined, within the corporate limits of the city of Chicago, without first obtaining a permit therefor, to be issued by the Commissioner of Health of the city of Chicago upon the written application of such person, firm, association, or corporation, which application shall state the location or proposed location of such hospital, the purposes for which it is to be opened, conducted, or maintained, the accommodations or proposed accommodations for the inmates thereof, the nature and kind of treatment given or proposed to be given therein, and the name and address of the chief surgeon, physician, or intended chief physician or surgeon attendant thereat.

SEC. 2. It shall be the duty of the said Commissioner of Health, upon the presentation of such application, to make or cause to be made strict inquiry into the facts set out in such application, and if, upon such inquiry, he shall find that such hospital is or is intended to be constructed so as to afford proper accommodation for the care of the persons received or proposed to be received therein, and that the chief physician or surgeon, or intended chief physician or surgeon attendant thereat, gives or is under agreement to thereafter give such attendance thereat as does or will render him responsible professionally for the medical or surgical treatment given or to be given to any and all persons thereat, and that such chief physician or surgeon is regularly authorized to act as such under the laws of the State of Illinois, and upon the payment to said Commissioner of Health of a licence, permit, inspection, or examination fee of — dollars, he shall issue a permit in the name of the city of Chicago to such applicant to open, conduct, manage, or maintain a hospital at the place and in the manner and for the purpose in such application mentioned, which said permit shall cease and be operative the 31st day of December next following the issue thereof.

SEC. 3. It shall be the duty of such person, firm, association, or corporation, permitted as aforesaid to open, conduct, or maintain a hospital within the corporate limits of the city of Chicago, to make a report to the said Commissioner of Health on or before the fifth day of each calendar month, showing a complete record of such hospital during the preceding month, including the number of inmates received, discharged, and died during the month, causes of death, and such other information as may be necessary to an intelligent sanitary supervision of the establishment; such record to be furnished on blanks prepared and supplied by the Commissioner of Health, verified by the affidavits or affirmation of the chief physician or surgeon or superintendent attendant thereat.

SEC. 4. Every hospital permitted as aforesaid shall at all times be open to the inspection of the said Commissioner of Health or his duly appointed assistants or inspectors.

SEC. 5. The Commissioner of Health of the city of Chicago is hereby authorized and empowered to inspect, or cause inspection to be made, whenever and as often as he may deem proper, of any hospital permitted as aforesaid within the corporate limits of the city of Chicago, and if, upon any such inspection, he shall find the same to be conducted, managed, or maintained in violation of the terms of the application for the permit under which the same was opened, conducted, managed, or maintained, or in violation of any of the health or sanitary ordinances, rules, or regulations of said city of Chicago, then and in that event he is hereby authorized and empowered to revoke any such licence issued for the opening, conduct, management, or maintenance of the same.

SEC. 6. Any person or persons, or corporation other than the regularly constituted authorities of the State of Illinois, county of Cook, or city of Chicago, opening, conducting, managing, or maintaining a hospital as hereinafter defined within the corporate limits of the city of Chicago without first having obtained a permit therefor as provided in Section 2 of this ordinance, or after a revocation of such permit under the authority conferred in Section 5 of this ordinance, or in violation of any of the provisions of this ordinance, shall be and is hereby declared to be guilty of maintaining a nuisance, and upon conviction thereof shall be fined in a sum not less than — dollars nor more than — dollars.

SEC. 7. For the purposes of this ordinance a hospital is hereby defined to mean any place or establishment used for the reception or care of the sick, injured, or dependent, including women awaiting confinement, or used for the medical or surgical treatment of mental or physical disease or injury.

SEC. 8. This ordinance shall take effect and be in force from and after its passage and due publication.

*Bellevue Hospital.*—The Commissioners of Public Charities and Correction of New York have lately asked the members of the Fourth Division of Bellevue Hospital to form an organization for the purpose of giving instruction to graduates and third-year students. The medical staff of the Fourth Division consists of Doctors C. L. Dana, George B. Fowler, and Alexander Lambert. The surgical staff consists of Doctors J. W. S. Gouley, Charles Phelps, and W. F. Fluhrer. The gynecologist is Dr. W. Gill Wylie.

The following communication from the Commissioners, and the answer thereto, are given for the information of the profession:

*Department of Public Charities and Correction.  
Commissioners' Office,*

NEW YORK, September 3, 1895.

GENTLEMEN: I am directed to transmit the following proceedings of the Board at a meeting held this day:

*Resolved*, That the seven members of the Fourth Division of Bellevue Hospital be requested to form, without delay, an organization for practical instruction to graduates in medicine and third-year students in the hospital and the bureau of medical and surgical relief for outdoor poor.

*Resolved*, That the members of the Fourth Division

shall be empowered to draw from the institutions subject to the division all necessary clinical material.

*Resolved*, That the Commissioners will heartily co-operate with the Fourth Division in carrying out the scheme of instruction.

*Resolved*, That certificates issued to those who shall have attended instruction, and signed by the seven members of the Fourth Division, shall be countersigned by the Commissioners, and shall bear the seal of Bellevue Hospital.

By order,

G. F. BRITTON,  
Secretary.

NEW YORK, September 6, 1895.

*To the Commissioners of Public Charities and Correction.*

GENTLEMEN: At a meeting of the Fourth Division of Bellevue Hospital, held on the fourth day of September, your communication was presented and read. The members of the division desire to express their high appreciation of the step you have taken, in the interests of the hospital and of the people at large, in thus adding to the usefulness of the vast amount of clinical material in Bellevue. They have, therefore, resolved to accept your invitation to become a teaching-corps, have formed the organization which you requested, and have further resolved to begin, on or about the 1st of October, the courses of instruction instituted by your honorable Board. Each course of instruction shall continue six weeks, and not less than five courses shall be given annually.

Very respectfully,

W. F. FLUHRER, M.D.,  
Secretary.

The American Public Health Association will hold its twenty-third annual meeting at Denver, Col., October 1st, 2d, 3d, and 4th. The following topics have been selected for consideration:

The Pollution of Water-supplies; The Disposal of Garbage and Refuse; Animal Diseases and Animal Food; The Nomenclature of Diseases and Forms of Statistics; Protective Inoculations in Infectious Diseases; National Health-legislation; The Cause and Prevention of Diphtheria; Causes and Prevention of Infant-mortality; The Restriction and Prevention of Tuberculosis; Car-sanitation; The Prevention of the Spread of Yellow Fever; Steamship and Steamboat Sanitation; Transportation of the Dead; The Disposal of the Dead; The Abuse of Alcoholic Drinks from a Sanitary Standpoint.

The New Mexico Territorial Board of Health is to be commended for the publication for general distribution of circulars giving information as to the manner in which pulmonary tuberculosis is most commonly disseminated, together with directions as to the best means of preventing such dissemination.

Prof. Schede, of Hamburg, has been elected to the Chair of Surgery in the University of Bonn in succession to Prof. Trendelenburg.

Dr. John S. Bristowe, a distinguished English clinician, died on August 20th at the age of sixty-eight years.

**Meetings of State, National, and International Medical Societies.**

	Meets.	Next meeting.
American Association of Obstetricians and Gynecologists.	Sept. 20, 1895	Chicago, Ill.
American Dermatological Association.	Sept. 17, 1895	Montreal, Can.
American Gynecological Society.	May 27, 1896	New York City
American Medical Association.	May 5-8, 1896	Atlanta, Ga.
American Orthopedic Association.	Sept. 19-21, 1895	Chicago, Ill.
American Public Health Association.	Oct. 1-4	Denver, Col.
Association of American Anatomists.	Dec. 18, 1895	Philadelphia.
Florida State Medical Society.	April 1, 1896	Sanford.
Illinois State Medical Society.	May 19, 1896	Ottawa, Ill.
International Congress of Gynecology & Obstetrics.	September, 1896	Geneva, Switzerland.
International Congress of Otolaryngology.	Sept. 23-26, 1895	Florence, Italy.
International Medical Congress.	August, 1896	Moscow, Russia.
Maine Medical Association.	June 4, 1896	Portland, Me.
Medical Association of Georgia.	April 15, 1896	Augusta, Ga.
Medical Association of the State of Alabama.	April, 1896	Montgomery, Ala.
Medical Society of the State of New York.	Jan. 28, 1896	Albany, N. Y.
Medical Society of the State of Pennsylvania.	May, 1896	Harrisburg.
Medical Society of the State of Tennessee.	April 9, 1896	Chattanooga.
New York State Medical Association.	October 15-17	New York City
Ohio State Medical Society.	May 27-29, 1896	Columbus, O.
Oklahoma Medical Society.	Nov. 14, 1895	Oklahoma City
Texas State Medical Society.	April, 1896	Ft. Worth, Texas.
Tri-State Medical Society of Illinois, Iowa, and Missouri.	Oct. 1-4, 1895	Des Moines, Iowa.
Utah State Medical Society.	Oct. 1, 2, 1895	Salt Lake City.
Vermont State Medical Society.	October 10, 11	Burlington, Vt.

**BOOKS AND PAMPHLETS RECEIVED.**

Our Insane Patients and their Hospital Relations. By Charles A. Ring, M.D. Reprinted from the Buffalo Medical and Surgical Journal, 1895.

Report of the Medical Missionary Society in China, for the Year 1894. Hong-Kong: Printed at the "China Mail" Office, 1895.

Etiology and Prophylaxis of Pulmonary Tuberculosis. By Henry Landis, M.D. Reprinted from the Lehigh Valley Medical Magazine, Vol. VI, No. 5.

Note-book of Materia Medica, Pharmacology, and Therapeutics. By R. E. Scoresby-Jackson, M.D., F.R.S.E. Fifth edition. Revised by J. Rutherford Hill and Ralph Stockman, M.D., F.R.C.P.E. Edinburgh: James Thin. London: Simpkin, Marshall & Co., 1895.

State of Washington, Third Annual Report of the Board of Health, for the Year Ending September 30, 1894. Olympia, Wash.: O. C. White, State Printer, 1895.

Remarks on the Treatment of Inevitable Abortion. By Charles P. Noble, M.D. Reprinted from the Codex Medicus Philadelphiae, 1894.

The Annual Report of the Health of the Imperial Navy. For the Twenty-sixth Year of Meiji (1893). Tokyo.

The Diagnosis of Pregnancy during the First Three Months. By Charles P. Noble, M.D. Reprinted from the Transactions of the Philadelphia County Medical Society, 1894.

Celiotomy for Puerperal Septicemia and Peritonitis. By Chas. P. Noble, M.D. Reprinted from the American Gynecological and Obstetrical Journal, 1895.

Circular No. 4. Sanitary Climatology. Information Relative to the Investigation of the Influence of Climate on Health. U. S. Department of Agriculture, Weather Bureau. Washington, D. C., March 23, 1895.

Diseases of the Nervous System. By W. R. Gowers, Reprinted from the Medical Magazine, 1895.

A Universal Language for Medical Men. By J. Keser, M.D., F.R.C.S. Reprinted from the Medical Magazine, 1895.

Some Impressions of Gynecology in Europe. By Hunter Robb, M.D. Reprinted from the Western Reserve Medical Journal, 1895.

Syphilis in the Innocent. By A. H. Cleveland, M.D. Reprinted from the University Medical Magazine, 1895.

Methods of Chest-examination, Supplementary to Auscultation and Percussion. By Edward O. Otis, M.D. Reprinted from the Boston Medical and Surgical Journal, 1895.

Annual Reports of the Managers and Officers of the State Hospitals of New Jersey, for the Year Ending October 1, 1894. Trenton, N. J.: Printed by the John L. Murphy Publishing Co., 1894.

Department of the Interior Census Office. Vital Statistics of Boston and Philadelphia Covering a Period of Six Years, Ending May 31, 1890. John S. Billings, M.D. Washington, D. C. Government Printing Office, 1895.

Indigestion. An Introduction to the Study of the Diseases of the Stomach. By George Herschell, M.D. Lond. Second edition. New York: G. P. Putnam's Sons. London: Baillière, Tindall & Cox, 1895.

Der Weg des Luftstromes durch die Nase. Auf Grund experimenteller und anatomischer Untersuchungen. Von Dr. Gottfried Scheff. Beilage zur Wiener klinischen Rundschau, 1895, Nr. 18.

Klinische Vorlesungen über Syphilis. Von Dr. E. von Düring. Hamburg und Leipzig: Verlag von Leopold Voss, 1895.

The Johns Hopkins Medical School. Annual Announcement, 1895-96. Baltimore: The Johns Hopkins Press, 1895.

Double Hemiplegia with Double Hemianopsia and Loss of Geographical Center. By Thomas D. Dunn, M.D. Reprinted from the University Medical Magazine, 1895.

The Relations of Infectious Processes to Mental Disease. By Charles K. Mills, M.D. Reprinted from the Transactions of the Congress of American Physicians and Surgeons, 1894.

Serum-therapy in Pulmonary Tuberculosis, with an Explanation of Secondary Symptoms following the Administration of Antitoxin. By Charles Wilson Ingraham, M.D. Reprinted from the Journal of the American Medical Association, 1895.

Hypnotism. By Chalmer Prentice, M.D. Reprinted from the Medical Record, 1895.

Perichondritis of the Laryngeal Cartilages. By C. P. Ambler, M.D. Reprinted from the New York Medical Journal, 1895.

Scopolamin Hydrobromate in Increased Intra-ocular Tension. By F. G. Ritchie, M.D. Reprinted from the Journal of Ophthalmology, Otolaryngology, and Laryngology.

Weekly Abstract of Sanitary Reports Issued by the Supervising Surgeon General M. H. S. Under the National Quarantine Act of April 29, 1878, and the Act Granting Additional Quarantine Powers and Imposing Additional Duties upon the Marine Hospital Service. Approved February 15, 1893. Vol. ix, Nos. 1 to 52. Washington: Government Printing Office, 1895.

The Diseases and Deformities of the Fetus: An Attempt Toward a System of Ante-natal Pathology. By J. W. Ballantyne, M.D., F.R.C.P.E., F.R.S.E. With plates. Vol. II. Congenital Diseases of the Subcutaneous Tissue and Skin. Edinburgh: Oliver & Boyd, Tweeddale Court. London: Simpkin, Marshall, Hamilton, Kent & Co., Limited, 1895.

Double Athetosis. Report of Two Cases. By William F. Drewry, M.D. Reprinted from the Virginia Medical Monthly, 1895.